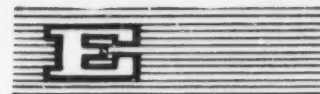




UNITED NATIONS
ECONOMIC AND SOCIAL COUNCIL



Distr.
LIMITED
E/ECA/UNCTC/5
13 February 1984
ENGLISH
Original: FRENCH

UNITED NATIONS CENTRE ON
TRANSNATIONAL CORPORATIONS

UNITED NATIONS ECONOMIC
COMMISSION FOR AFRICA

Regional Workshop on the Role of
Transnational Corporations in the
Mining Industry in Africa

Manzini, Swaziland, 2-6 July 1984

LC/NAIROB

THE ROLE OF TRANSNATIONAL CORPORATIONS
IN THE TIN INDUSTRY: CASE OF ZAIRE

A Technical Paper*

* This paper was prepared by a consultant to ECA. The views expressed herein are those of the Author and do not necessarily represent the views of this organization.

Table of Contents

CHAPTER		PARAGRAPHS	PAGE
	INTRODUCTION	1 - 5	1
I	PRODUCTION AND PROCESSING OF COPPER	5 - 58	2 - 17
	A. General features of the copper industry	5 - 14	2 - 3
	1. Main sectors of the copper industry	5 - 9	5
	2. Products supplied by the copper industry	10 - 13	2 - 3
	3. Qualities of copper supplied to the fabricators	14	3
	B. Structure of world copper production	15 - 29	3 - 8
	1. Location of world copper resources	15 - 19	3 - 5
	2. Trends in world copper production	20 - 27	6 - 8
	3. Concentration of world copper production	28 - 29	8
	C. Zaire's position in the world copper industry	30 - 35	8 - 11
	1. Zaire's place in world mining production	30 - 31	8
	2. Zaire's place in respect to world copper resources	32 - 33	8 - 10
	3. Zaire's place in world copper production	34 - 34	10
	D. Extent of Zairian control over national copper production	35 - 58	11 - 16
	1. Copper ore production	35 - 42	11 - 12
	2. Local processing of ore	43 - 51	13 - 15
	3. Local processing of copper into manufactures	52 - 58	15
II	STRUCTURE OF THE INTERNATIONAL COPPER MARKET	59 - 114	17 - 27
	A. Zairian control of marketing	59 - 75	17 - 20
	1. Role of the Société Zairoise de commercialisation des Minerais (SOZACOM)	59 - 70	17 - 19
	2. Compagnie Maritime Zairoise and the transport of Zairian copper	71 - 73	19 - 20
	3. Monopoly of the Société Nationale d'Assurances (SONAS)	74 - 75	20
	B. Zairian copper on the international market	77 - 85	20 - 23
	1. Transport routes and their problems ...	77 - 80	20 - 21
	2. Geographical distribution of Zairian copper exports	81	21
	3. Price of Zairian copper on international markets	82 - 85	21 - 23

Table of Contents (cont'd)

CHAPTER		PARAGRAPHS	PAGE
II	(cont'd)		
C.	Machinery for determining copper prices	87 - 104	23 - 26
	1. Ways of selling different types of copper	87 - 90	23 - 24
	2. Principal mechanisms for pricing copper	91 - 97	24 - 25
	3. Functioning of the large commodity exchange	98 - 104	25 - 26
D.	Role of the Intergovernmental Council for copper exporting countries (CIPEC)	105 - 114	26 - 27
III	TRANSNATIONAL CORPORATIONS IN THE ZAIRIAN COPPER INDUSTRY	115 - 180	28 - 39
A.	Establishment of transnational corporations in the Zairian mining industry	115 - 139	28 - 32
	1. Role of King Leopold II in establishing the first companies	129 - 139	30 - 32
	2. Control by foreign financial groups over the new companies	115 - 128	28 - 30
		129 - 139	30 - 32
B.	Structural changes in the Zairian copper industry	140 - 153	32 - 34
	1. The end of chartered companies	140 - 147	32 - 33
	2. Nationalization of the mining sector	148 - 149	33
	3. Participation in international consortia	150 - 153	34
C.	Profile of major corporations involved in the Zairian copper industry	154 - 180	34 - 39
	1. Générale des Carrières et des Minerais (Gécamines)	154 - 157	34 - 35
	2. Société de Développement Industriel et Minier du Zaïre (SODIMIZA)	158 - 165	35 - 37
	3. Société Minière de Tenke-Fungurume (SMTF)	166 - 171	37 - 38
	4. Société Internationale des Mines du Zaïre (SIMZ)	172 - 175	38 - 39
	5. Bureau de Recherches Géologiques et Minières (BRGM)	176 - 178	39
	6. Shabamines and Falcombridge of Africa Zaire Limited	179 - 180	39

Table of Contents (cont'd)

CHAPTER		PARAGRAPHS	PAGE
IV	PROFIT SHARING ARRANGEMENTS BETWEEN THE GOVERNMENT OF ZAIRE AND THE TRANSNATIONAL CORPORATIONS	131 - 229	40 - 48
A.	Zairian regulation of mining operations	131 - 185	40 - 41
	1. Basic general principles	181	40
	2. Different types of mining systems	182 - 185	40 - 41
	3. Relations between the Zairian State and mine concessionaires	186	41
B.	Taxation of mining operations	187 - 192	41 - 42
C.	Special provisions under the investment codes ..	193 - 210	42 - 44
	1. The 1965 Investment Code	193 - 202	42 - 43
	2. The 1969 Investment Code	203 - 210	43 - 44
D.	Position of the Zairian State with regard to Control of transnational corporations	211 - 223	45 - 47
	1. Zairianization	211 - 215	45
	2. Reasons for "radicalization"	216 - 219	46
	3. Significance of denationalization	220 - 223	46 - 47
E.	Outline of basic features in an agreement: the case of SODIMIZA	224 - 229	47 - 48
	1. Tax mitigation measures	225 - 227	47 - 48
	2. Special financial terms	228	48
	3. Commitments made in return for the benefits accorded	229	48
	CONCLUSION	230 - 235	49
	BIBLIOGRAPHY		50 - 52
	GLOSSARY		53

LIST OF TABLES

TABLES	PAGE
1. World copper reserves	4
2. World copper resources	5
3. Recent world copper production	6
4. Copper production and capacity of main countries .	7
5. Concentration of copper production among corporations	9
6. Zaire's place in respect of world copper resources	10
7. Zaire's place in world copper production	11
8. Output of ore-concentrating plants	13
9. Output of metallurgical plants	14
10. Zairian copper exports according to country of destination	22
11. Prices of electrolytic copper at Brussels, London and New York	23
12. Main indicators of Gécamines	35
13. Indicators of activity of CODIMIZA	37

INTRODUCTION

1. The object of this study is to examine various aspects of the role of transnational corporations in the copper industry of Zaire. The importance of copper to the country's economy adds a special dimension to the analysis: those in control of the sector indirectly control the vital centres of the national economy. In this light, the study examines the significance of efforts by the Zairian Government to control the main channels of distribution of this product, the reaction of transnational corporations which have attempted either to dominate or maintain the status quo in the sector and consequent problems arising from TNC/government rivalry.
2. This study is divided into four substantive chapters. Chapter I discusses the production and processing of copper and in particular examines the position of Zaire in this field, both in an African context and at the international level. It determines the extent of Zaire's involvement in the various stages of processing copper ore and indicates the degree and limitations of State control at each stage and the role already exercised by the transnational corporations at this level.
3. In Chapter II attention focusses on the complex structure of the international copper market. The text deals with Zaire's ability to control marketing mechanisms, particularly through SOZACOM and examines various price-setting techniques, the functioning of the large commodity exchanges and the role played by transnational corporations. The Chapter concludes by indicating the strengths and weaknesses of CIPPEC as a negotiating tool for member States.
4. Chapter III presents the transnational corporations in their specific field of operations. It first examines the factors which favoured establishment of the TNCs. Then discusses the way in which financial groups controlled them and describes ensuing structural changes in the sector. The chapter concludes with a study of the leading transnational corporations in the Zairian copper industry and briefly outlines their main features.
5. Chapter IV analyses profit-sharing arrangements between the Zairian Government and transnational corporations. The negotiating power of each side is assessed, in particular through Zaire's control of mining activities, the taxation system applied to mining operations and the concessions granted to transnational corporations under the Zairian investment codes. Zaire's control of transnational corporations is illustrated through measures for Zairianization, "radicalization" or denationalization and through a case study of a mining agreement. Chapter VI contains a conclusion to the study.

CHAPTER I

PRODUCTION AND PROCESSING OF COPPER

A. General features of the copper industry

1. Main sectors of the copper industry

6. The copper industry consists of three main sectors: the primary sector, the fabricating stage and secondary smelting. ^{1/}

(a) Primary sector

7. The primary sector, which covers mining in general, can be divided into two stages: the mining industry itself, which extracts all types of ore and produces concentrates, the copper content of which varies from 25 to 35 per cent; and the metallurgical industry, which processes the concentrates and produces various intermediate products consisting mainly of blister and wirebar.

(b) Fabricating stage

8. The second phase of the copper industry is concerned with fabrication of the metal, using wirebar or alloys, by means of rolling, extrusion or drawing. Fabricators supply semi-finished products such as wire, tubes, sheets and sections, which are later transformed into final products by industrial users.

(c) Secondary smelters

9. Secondary smelters have three principal sources of supply: scrap metal or cuttings from the mill after rolling, extrusion and drawing, which constitute about 30 per cent of the total initial tonnage processed; scrap metal or cuttings from the industries that consume semi-finished products; and copper scrap recovered from demolition operations.

2. Products supplied by the copper industry

10. These are divided into two main categories: metallurgical and semi-finished products.

(a) Metallurgical products

11. The metallurgical industry supplies blister, electrolytic copper and wirebar, as well as several other types of unrefined copper.

^{1/} For technical aspects see F.R. Mikesell, The World Copper Industry (Baltimore and London, Johns Hopkins University Press, 1969).

(b) Semi-finished products in copper or brass

12. Semi-finished products are generally divided into two types: articles for direct consumption, such as tubes, wire, coils, busbars and commutator parts; and intermediate articles such as bars, sections, strips and sheets.

13. It should be noted that the industry clearly distinguishes between wire-drawing, which accounts for some 70 per cent of the market for semi-finished products, and the various products manufactured by multipurpose shops.

3. Qualities of copper supplied to the fabricators

14. Four different qualities of copper are supplied to the world market: refined copper containing oxygen (refined by electrolytic or thermal means); refined or oxidized copper containing a small quantity of phosphorous; oxygen-free refined copper produced from melted cathodes, which are cast in the absence of air; and cathode copper with a purity of 99.9 per cent.

3. Structure of world copper production1. Location of world copper resources

15. A distinction is generally made between copper "reserves" and copper "resources": reserves comprise the total amount of ore in known deposits which are technically recoverable at the time when they are identified; resources consist of ores which may be mined under present economic conditions.^{2/}

(a) World copper reserves

16. Various studies have been undertaken by organizations such as BMUS, CIPEC and the United Nations to make quantitative evaluations of world copper reserves. Despite differences in estimates, the studies nevertheless give some idea of the size of world reserves, which are in the order of 450 million metric tons: This only represents about 20 per cent of world copper resources. These global figures may be broken down to indicate respective shares of world reserves represented by the different continents or economic groups.

(i) Distribution by continent shows the following:

North America:	33.3 per cent
South America:	23.9 per cent
Europe	: 13.3 per cent
Africa	: 13.3 per cent and
Asia	: 5.7 per cent.

^{2/} See Mikesell, *op. cit.*, p. 11, *et. seq.*, as well as ECA, Mineral raw materials in Africa: copper, E/CN.14/MIN.30/3.5, Addis Ababa, September 1980, p.4.

These data are shown in the following table:

Table 1. World Copper Reserves

Type of country	Proven or probable reserves in thousands of metric tons		Potential reserves in thousands of metric tons		Total in thousands of metric tons	
		%		%		%
1. CIPEC countries	218 500	47.90	87 000	22.60	305 500	36.32
2. Developing countries	48 200	10.56	59 000	15.32	107 200	12.74
3. Exporting developed countries	34 200	7.65	51 000	13.25	85 900	10.21
4. Importing developed countries	99 600	21.83	108 000	28.05	207 600	24.68
5. Market-economy countries	401 200	87.94	305 000	79.22	706 200	83.95
6. Planned-economy countries	55 000	12.06	80 000	20.78	135 000	15.05
7. World total	456 200	100.00	395 000	100.00	841 200	100.00

Source: Hamid, M.G., The Copper Industry and its perspectives in Africa, African Institute for Economic Development and Planning, Dakar, 1978, R/021/78, p. 13. (Based on data from CIPEC, Outlook for Development in the World Copper Industry, Paris, 1977).

(ii) Distribution by economic group gives the following results:

- some two thirds of identifiable world reserves are located in the developing countries;
- a large proportion of estimated reserves is situated in Chile, which alone contains over 20 per cent of total world reserves;
- the main developing producer countries, particularly Peru, the Philippines, Zaire and Zambia, possess significant levels of the remaining reserves.

Table 2. World Copper Resources (in millions of metric tons)

Location	Reserves	Other resources	Total
1. North America			
United States	84.35	290.24	374.59
Canada	30.83	108.84	139.67
Other countries	29.93	27.21	57.14
Total	145.12	426.29	571.40
2. South America			
Chile	84.35	117.91	202.26
Peru	31.74	36.28	68.02
Other countries	19.95	63.50	83.44
Total	136.05	217.68	353.73
3. Europe			
Total	6.35	36.28	42.63
4. Africa			
Zaire	25.40	27.21	52.60
Zambia	29.02	53.49	82.51
Other countries	9.07	18.14	27.21
Total	63.50	108.84	172.33
5. Asia			
Total	27.20	63.49	90.70
6. Oceania			
Total	18.14	54.42	72.56
7. Planned-economy countries			
Total	59.86	172.33	232.19
8. Sea-bed nodules			
Total	-	689.32	689.32
World Total	456.22	1 768.65	2 224.90

Source: ECA, op.cit., p. 16, and Mikesell, op. cit., p. 12 (based on data from the United States Bureau of Mines).

17. It should be noted that Zaire and Zambia alone account for about 86 per cent of African reserves. 3/

(b) Distribution of world resources

18. World copper resources are estimated at 1 770 million metric tons, 39 per cent of which are concentrated in polymetallic nodules situated mainly on the floor of the Pacific Ocean. Since no appropriate extraction technology has yet been perfected, it is considered that these nodules merely constitute a potential resource for the future.

19. Africa has 6 per cent of world copper resources, located mainly in Zaire and Zambia, which account for approximately 83 per cent of African resources.

2. Trends in world copper production

(a) Rapid growth in production

20. The use of copper has a history of over 5 000 years. Expansion in the production of copper, however, only dates from the beginning of the 19th century phenomenon of European industrialization and is closely linked with electrical applications of copper and related techniques.

21. World copper production thus rose from 30 000 tons in 1850 to 500 000 tons in 1900, reaching 2.5 million tons in 1950 and an over-all total of about 25 million tons today.

Table 3. Recent World Copper Production (in thousands of tons)

Type of production	1975	1977	1978	1979	1980
1. Copper ores					
Africa	1 471.5	1 453.0	1 372.1	1 235.1	1 354.1
World	7 358.3	7 982.0	7 873.5	7 937.2	7 839.9
Africa/world percentage ratio	18.72	18.26	17.42	16.20	17.39
2. Blister copper					
Africa	1 343.2	1 387.3	1 315.7	1 221.2	1 282.0
World	7 955.3	8 155.2	8 093.3	8 149.2	7 984.2
Africa/world percentage ratio	16.92	16.99	16.25	14.98	16.05
3. Refined copper					
Africa	882.0	923.8	919.2	852.0	934.4
World	8 789.7	9 100.2	9 201.2	9 359.3	9 402.8
Africa/World percentage ratio	10.03	10.15	9.99	9.10	9.93

Source: World Metal Statistics, Vol. 34, No. 4, April 1981.

3/ Cf. ECA. op. cit., p. 4.

22. Africa (including the Republic of South Africa) contributes on average about 17.98 per cent of world production of copper ores and concentrates, 13.68 per cent of world blister copper production and only 9.34 per cent of its refined copper. Africa's contribution comes from 11 producer countries, mainly Zambia and Zaire.

(b) Changes in main producer countries

23. The leading position in world production is closely related to economic and technical changes that have taken place in various parts of the world. 4/

24. Europe, for example, was the centre of copper production in 1800: at that time, Japan and Russia were already important producers. The largest proportion of the world supply came, however, from British and German mines. Great Britain became the leader in copper production around the 1950s with a contribution of some 1 500 tons annually out of a world production of 30 000 tons; Japan, Russia and Chile were the other important suppliers at that time. North America gained increasing importance and became the leader around the 1900s: the United States then produced 250 000 tons, Mexico 30 000 tons and Canada 20 000 tons out of a total world production of nearly half a million tons.

25. The mineral wealth of central Africa, especially Zaire and Zambia, caught the attention of international capital in the first years of this century, and these countries took their places among the largest producers in the world, a position they still hold today.

26. The respective shares of the leading countries in world copper production at the various stages in 1977 and their estimated capacity for 1983 are shown in the following table.

Table 4. Copper Production and Capacity of Main Countries

Country	Copper ore		Blister copper		Refined copper	
	Actual production 1977	Estimated capacity 1983	Actual production 1977	Estimated capacity 1983	Actual production 1977	Estimated capacity 1983
	percentage	percentage	percentage	percentage	percentage	percentage
1. Canada	12.3	12.4	7.8	7.5	7.4	7.6
2. United States	21.6	13.7	20.9	22.5	24.7	27.8
3. Chile	16.7	13.7	13.8	10.5	9.8	6.8
4. Peru	5.4	5.7	5.0	4.7	2.5	4.2
5. Zaire	7.6	7.3	7.0	6.4	1.4	2.4
6. Zambia	10.4	7.8	10.1	8.5	2.4	7.1
7. Philippines	4.3	4.8	-	0.9	-	0.9
Total	78.3	71.9	54.5	51.2	55.3	55.2

4/ Cf. Hamid, *op. cit.*, p. 14, for past trends

27. It should be pointed out here that while two thirds of known world copper reserves are located in developing countries, these countries account for only 53.5 per cent of world production of copper ore, 39 per cent of blister copper production capacity and a low 27 per cent of refined copper production capacity.^{5/}

3. Concentration of world copper production

28. Copper production is confined not only to a few countries but also to a few corporations. The following table shows that some 20 corporations predominate in copper production: thirteen corporations account for 55.8 per cent copper ore production; fifteen corporations contribute 73.0 per cent of blister copper production; fourteen corporations produce 63.0 per cent of world refined copper. In addition, nearly two thirds of the 20 leading corporations shown are in the developed countries and only two of them are in Africa, namely, NCCM-KCM in Zambia and Gécamines in Zaire.

29. As regards the integration of the copper industry, it should be noted that eight leading corporations are involved in all stages from ore production to refining; they account for about 50 per cent of world copper production.

C. Zaire's position in the world copper industry

1. Zaire's place in world mining production

30. Zaire has considerable mineral wealth, an exhaustive inventory of which has yet to be made. The country is one of the world's leading ore producers; it has in addition a large variety of ores and is the world's biggest producer for some of these.

31. The place Zaire occupies with respect to some of these ores deserves emphasis: for many years, the country has been the world's leading producer of cobalt; it ranks among the world's leading producers of industrial diamonds, copper, manganese, zinc and cadmium; finally, Zaire produces significant quantities of such other vital minerals as wolfram, monazite, silver, gold, germanium and more.

2. Zaire's place in respect to world copper resources

32. In 1978, Zaire's known copper reserves were estimated at approximately 25 million tons of copper metal. The main deposits are located in Shaba province but there are also considerable reserves in Lower Zaire to the north of Mouji-May and in easter and Upper Zaire.

^{5/} Cf. UNIDO, op. cit., p. 16.

Table 5. Concentration of Copper production among corporations (1977)

Concentration in the production of ores				Concentration in the production of blister copper				Concentration in the production of refined copper			
Corporation	Percentage share	Cumulative percentage share	Corporation	Percentage share	Cumulative percentage share	Corporation	Percentage share	Percentage share	Cumulative percentage share	Percentage share	Cumulative percentage share
1. Codelco	11.1	11.1	1. NCCM-RCM	9.9	9.9	1. NCCM-RCM	9.3	9.3	9.3	9.3	9.3
2. NCCM-RCM	10.7	21.8	2. Asarco	9.9	19.8	2. Asarco	7.8	16.1	16.1	7.8	16.1
3. Gécamines	8.5	30.3	3. Codelco	7.9	27.7	3. Kennecott	5.9	22.0	22.0	5.9	22.0
4. Asarco	7.3	37.6	4. Gécamines	5.3	34.0	4. Phelps Dodge	5.4	27.4	27.4	5.4	27.4
5. Kennecott	5.5	43.1	5. Kennecott	5.5	39.5	5. Codelco	5.4	32.8	32.8	5.4	32.8
6. Rio Tinto Zinc	5.5	48.6	6. Phelps Dodge	5.1	44.6	6. Noranda	4.9	37.7	37.7	4.9	37.7
7. Phelps Dodge	3.9	52.5	7. Hippon Mining	5.1	49.7	7. Hippon Mining	4.9	42.5	42.5	4.9	42.5
8. Anaconda (Arco)	2.9	55.4	8. Mitsubishi	3.6	53.3	8. Metallurgie Hoboken	3.9	46.4	46.4	3.9	46.4
9. Nemont	2.7	58.1	9. Anaconda (Arco)	3.5	56.8	9. Norddeutsche Raffinerie	3.0	49.4	49.4	3.0	49.4
10. Inco	2.2	60.3	10. Enami	3.1	59.9	10. Mitsubishi	3.0	52.4	52.4	3.0	52.4
11. RIE Bor	2.0	62.3	11. Rio Tinto Zinc	2.8	62.7	11. Amax	2.8	55.2	55.2	2.8	55.2
12. Duval (Pennzoil)	1.8	64.1	12. Nemont	2.7	65.4	12. Rio Tinto Zinc	2.5	57.8	57.8	2.5	57.8
13. Atlas Consolidated	1.7	65.8	13. Noranda	2.5	68.0	13. Gécamines	2.5	60.3	60.3	2.5	60.3
			14. Norddeutsche Raffinerie	2.5	70.5	14. Anaconda (Arco)	2.5	62.8	62.8	2.5	62.8
			15. Amax	2.5	73.0						

Source: UNIDO, op. cit., p. 23-24.

33. Zaire's place among African and world producers is illustrated in the data in the following table.

Table 6. Zaire's place in respect to world copper resources (millions of tons)

Country	Reserves	Other Resources	Total
1. Total for Africa	53.50	100.84	172.33
Zaire	25.40	27.21	52.60
Zambia	29.09	53.49	92.51
Other countries	9.07	18.14	27.21
2. Total for the world	455.22	1 753.65	2 224.90
3. Zaire/Africa percentage ratio	40.00	25.00	30.52
4. Zaire/world percentage ratio	5.57	1.54	2.36

Source: Based on data from ECA, op. cit.

3. Zaire's place in world copper production

34. In 1980, Zaire's production of copper in the form of ores and concentrates amounted to 460 billion tons, representing approximately 5.86 per cent of world production and about 33.7 per cent of African production. In the same, year, it produced 425.7 billion tons of blister copper, or 5.33 per cent of world production and 33.20 of African production.

35. Zaire produces copper metal in the form of cathodes and refined copper. Quantitatively, its contribution to world production of copper metal is minimal, representing only 1.53 per cent in 1980, but its contribution to African production is substantial, amounting to 15.43 per cent in the same year.

Table 7. Zaire's place in world copper production (1980)
(1 000 tons)

Production	Copper Ores	Blister Copper	Refined Copper
1. Total for the world	7 839.9	7 984.2	9 402.8
2. Total for Africa	1 354.1	1 232.0	934.4
3. Total for Zaire	460.0	425.7	144.2
4. Zaire/Africa percentage ratio	33.70	33.20	15.43
5. Zaire/world percentage ratio	5.85	5.33	1.53

Source: Data from World Metals Statistics, op. cit.

D. Extent of Zairian control over national copper production

1. Copper ore prorudction

(a) Mines

36. As already indicated, the deposits which are currently being mined are mainly in Shaba. They are generally stratiform in type and belong to the Zairian-Zambian copper- and cobalt-bearing belt commonly known as the Copperbelt.^{5/} The mining of copper ores in Shaba dates as far back as 1906, when the Union Minière de Haut Katanga (UMHK) was established.

37. At present, the mining of copper ores is aligned along the Lubumbashi-Kolwezi-Likasi highway, primarily because mining installations and activities are situated along this road; they include those in Central Shaba, with the Kambove underground mine and the Shituru plants; Western Shaba, with the Kolwezi open-pit mine, the Luilu refinery and the Kamoto concentrator; Southern Shaba, with the Kipushi concentrator and the Kisenda and Musoshi underground mines.

38. Three major corporations control all the working mines in this region today (see chapter III for further details):

6/ Cf. Nyembo Shabani, L'industrie du cuivre dans le monde et le progrès économique du copperbelt africain (Brussels, La Renaissance du Livre, 1975).

- The Générale des Carrières et des Mines (Gécamines), a 100 per cent State-owned corporations; it was formerly the UMIK, which was nationalized in 1967;
- The Société Minière de Tenke-Fungurume (SMTF), which is involved in developing the large deposit at Tenke-Fungurume. This is an international consortium comprising American, British, French and Japanese interests, with a 20 per cent share owned by the Zairian State;
- The Société de Développement Industriel et Minier du Zaïre (SODIMIZA), established in 1969 by an association of interests between the Zairian State, which holds 20 per cent of the capital, and a Japanese group.

39. Until 1972, Gécamines was the only copper-producing corporation in Zaïre; it remains the country's main producer of this ore.

(b) Ore concentrating plants

40. Concentration is the first stage of the metallurgical process in which ore is transformed into copper metal. In the case of Ghana, at each open-pit or underground mine in operation, there is generally a concentrator for direct processing of the ore before it is sent to the breaking and crushing facilities.

41. Gécamines has six concentrators with the following annual capacities:^{2/} Kipushi (1935), 1.4 million tons; Kolwezi (1941), 28 million tons; Kambove (1961), 1.4 million tons; Kalandi (1962), 0.8 million tons; Kamoto (1968), 4 million tons; Dima (1980), 4 million tons. The six Gécamines concentrators manufacture semi-finished products with a copper content ranging from 18 to 55 per cent. The products are subsequently transported to the three major industrial centres of Lubumbashi, Likasi-Shituru and Kolwezi-Luilu, where further metallurgical processing takes place.

42. The SODIMIZA concentrator started to operate at the end of 1972 and now produces ore concentrates with an average copper content of about 36.5 per cent. Unlike Gécamines, SODIMIZA exports its entire output of concentrates to Japan, where it undergoes further metallurgical processing. Clearly this procedure gives rise to a number of financial problems in terms of lost income for Zaïre, creation of jobs for nationals and transfer of technology for related industries in Zaïre.

^{2/} The years in which the concentrators were put into operation are in parentheses. (See ECA, op. cit., p. 44)

Table 8. Output of ore-concentrating plants (In thousands of tons)

Concentrators	1976	1977	1978	1979	1980
1. Gécamines concentrators					
Kamoto	478	445	450	451	439
Dima	-	-	-	-	-
Kolwezi	915	851	721	691	218
Kanbove	132	122	107	96	92
Kakanda	89	110	118	92	100
Kipushi	157	183	203	202	189
2. SODIMIZA concentrators					
Total	102	81	89	81	93

Source: Gécamines, Rapport annuel 1980, and Department of the National Economy and Industry, Conjoncture économique, Kinshasa, 1981.

2. Local processing of ore

(a) Metallurgical extraction plants

43. Metallurgical processing includes pyrometallurgical plants the Panda electric and Lubumbashi smelters; and the hydrometallurgical plants of Luilu, Shituru and Kolwezi.

44. Pyrometallurgy (smelting) involves dry processes generally comprising two stages: ^{8/}

- Separation of the gangue from the useful compound;
- Production of metal from the compound.

45. Hydrometallurgy (electrolysis) is a process used in the case of ores containing copper in an oxidized or carbonate form and takes place in a sulphuric solution.

46. Cathode or blister copper is produced by these processes; the quantities produced in recent years are set forth in the following table.

^{8/} For technical aspects, see M. Defrene, "La métallurgie du cuivre pratiquée par la Gécamines au Shaba", in Industrie minière et développement au Zaïre, vol. II, PUZ, Kinshasa, 1976, p. 43.

Table 9. Output of Metallurgical plants (in thousands of tons)

Plants	1976	1977	1978	1979	1980
1. Pyrometallurgical plants					
(a) Lubumbashi:					
Blister copper	123.5	144.8	135.3	142.0	137.4
Black copper	10.9	14.7	10.6	-	11.0
(b) Panda					
Black copper	0	0	3.1	6.9	11.3
2. Hydrometallurgical plants					
(a) Luilu:					
Deposited copper	167.4	171.2	147.0	135.4	160.4
(b) Shituru:					
Deposited copper	121.3	126.4	97.4	95.8	125.3
(c) Kolwezi:					
Black copper	1.1	1.3	1.5	2.1	2.4

Source: Gécamines, op. cit.

(b) Refineries

47. The cathode or blister copper produced by the Gécamines metallurgical plants is not sufficiently pure to meet the requirements of end users. The cathodes are sent to the Shituri and Likasi refineries, which transform them into high-grade copper. The electrolytic copper thus obtained has a copper content of over 99.95 per cent, and the casting of refined copper permits the manufacture of various types of wirebars to meet customer requirements.

- (i) By refining at Shituri part of the output of cathode copper, it was possible in 1980 to produce 144 200 tons of electrolytic-quality copper and 35 400 tons of soluble anodes. This output, however, which represents an increase of about 40 per cent over that of 1979, is well below the annual output capacity of 250 000 tons of electrolytic copper. Output is apparently limited by a lack of imported coal. 2/

- (ii) The remaining part of the blister copper output, which represents about half of Zaire's average output, is exported to Belgium for refining by Métallurgie Hoboken.

48. Commercial or technical arguments put forward so far to justify refining outside of Zaire appear to be largely fallacious. 10/

49. There is thus an urgent need to establish a refinery for processing Zairian copper in Zaire, for several reasons. 11/ First, wirebars account for 51 per cent of the products currently sold by SOZACOM, the remaining 49 per cent consisting of winning cathodes and blister. On the one hand, electrolytically-refined cathodes are gradually replacing wirebars on the international market; on the other, SOZACOM is having to pay the Hoboken refinery at Olen substantial refining costs for processing its winning cathodes and blisters. 12/ In addition, the copper sent to Métallurgie Hoboken often contains such precious metals as gold, silver, cadmium and the like. These metals, which have great market value, completely escape the attention of Zairian inspectors and their recovery at Olen is not reported to Gécamines. 13/

50. No decision has been reached yet regarding location of the refinery either in Shaba or in Lower Zaire. A point could be made, however, that locating it in the Inga Free Zone would present greater advantages than a mere expansion of the Lululu refinery.

51. One remaining problem is the African and Zairian capacity to consume refined copper. Estimates indicate that in 1980 Africa accounted for only 1.16 per cent of world consumption and Zaire for only 1.01 per cent of Africa's total consumption during the same year. The figures do not augur well for a refinery of the size envisaged, unless, as with some other African industries, it was from the outset designed to be essentially outward-looking.

10/ Cf. Ilunga Ilunkamba, Cuivre, Technologie et Dépendance au Zaïre, CODESRIA/UNITAR Seminar, Addis Ababa, August 1979, p. 9-10.

11/ See Mochin, Raffinerie du cuivre au Zaïre (Brussels, March 1975), and J. Gonzalez, Rapport technique, usine de raffinage électrolytique de cuivre au Zaïre, UNIDO, February 1978.

12/ Gonzalez, ibid.

13/ See Le Portefeuille, No. 15, March 1982, p. 15. African Sub-regions, (no date) (1987?), and the Ministry of Economic Affairs, Possibilités d'une industrie de transformation du cuivre au Congo (no date) (1987?).

3. Local processing of copper into manufactures

52. Zaire has some downstream copper-processing enterprises. Their production capacities, however, often exceed the small size of the country's existing domestic market and the potential for export to neighbouring African regions.^{14/}

53. The most important of these installations is Lamincoirs, Tréfileries et Câbleries (LATRECA), a company established in 1949/1950, whose factories are located at Lubumbashi.^{15/} Created to process non-ferrous metals, it was initially designed to meet the needs of such local industries as railways, mining companies and electricity production and distribution companies. Despite an annual capacity in the order of 10 000 tons of manufactured products in copper, aluminium, lead, zinc and various non-ferrous alloys, LATRECA has long been operating below capacity, for the reasons mentioned above.

54. The second largest installation in Zaire is CABELCOM. The company was founded in 1966 for the production of electrical wire and insulated cable. Although initially designed with a capacity of 8 000 tons per year, CABELCOM has only managed to produce on average from 1 000 to 2 000 tons annually.

55. The installations of LATRECA, which is a former affiliate of Cuivre et zinc Belgique incorporated in Belgium, as well as those of CABELCOM, a current affiliate, were integrated with Gécamines on 1 January 1975 and to date constitute the section Lamincoirs et Câbleries (LC) of Gécamines.^{16/}

56. These production units of Gécamines now specialize in the processing of copper and its alloys - brass and bronze. The output of the rolling mills and cable-works in 1980, using in the beginning mostly metal from Gécamines, amounted to 1 751 tons in the form of various manufactured products. Rolling-mill products include sheets, bands, bars, plates, tubes, sections and wire rod (1 000 tons). The output of the cable-works (742 tons) includes low- and medium-tension bare and insulated wire and cables.^{17/}

57. Other companies such as BEZAL, CHANIMETAL and SPLENDOR produce copper, brass and bronze castings for the manufacture of metal products, bronze parts, wrought metal and roofing sheets.

58. It should be noted that most of the goods produced by Zairian firms are directed at the domestic market; the export of copper products remains a problem.

^{14/} For all these problems, see the study conducted for ECA by Maxwell Stamp Associates Limited, Pre-investment study of the copper fabricating industry in the East and Central African Sub-regions, (no date) (1987?), and the Ministry of Economic Affairs, Possibilités d'une industrie de transformation du cuivre au Congo, (no date) (1988?).

^{15/} See Mukendi wa Nsanga, "Possibilités de transformation des produits cuivreux au Shaba-Cas Latreca" in Industrie minière, vol. II, PUZ, 1975, p. 179.

^{16/} See Le Portefeuille, op. cit., p. 20.

^{17/} Cf. Gécamines, Rapport annuel, op. cit., p. 21.

CHAPTER II

STRUCTURE OF THE INTERNATIONAL COPPER MARKET

A. Zairian control of marketing

1. Role of the Société Zairoise de Commercialisation des Minerais (SOZACOM)

(a) SOZACOM activities

59. The idea of establishing a company for marketing Zairian ores was first put forward in a presidential statement of 30 November 1973: "In the area of marketing, rigorous control will be established over the destination of our copper". In this context, SOZACOM was established by Law No. 74-010 of 10 July 1974.

60. SOZACOM is a state corporation governed by the law that sets general provisions applicable to public enterprises; its statutes were published on 5 May 1976. The company's objective is the marketing of ores and mining products exported by Gécamines and other ores and products designated by order of the President of the Republic. Until recently, SOZACOM's marketing activities, which began in December 1975, covered products of Gécamines and the Société Minière de Kisenge (SMK). The ordinance of 2 April 1981 on the regulation of marketing conditions for Zairian ores and mining products ^{18/} has considerably expanded SOZACOM's role and sphere of activity. Some of the new privileges granted to the company are mentioned hereafter.

61. The new marketing conditions apply to all mining products extracted from the Zairian subsoil by any public, semi-public or private enterprise of an industrial, commercial or other nature. Mining products include marketable concentrates as well as products for metallurgical processing obtained by the operating companies.

62. With authorization of the sponsoring authority, SOZACOM may conclude contracts that will enable it to either to replace other marketing companies or enter into association with them.

63. SOZACOM acts as sole agent for the marketing of copper, cobalt or other ores or mining products produced by Gécamines and for the marketing of diamonds. SOZACOM's marketing responsibility covers any operations involving placement of Zairian ores or mining products on local or international markets through sale, exchange or purchase, as specified under mining legislation.

64. In the context of mining agreements, the State may assign SOZACOM permanent or temporary responsibilities for the control or monitoring of the activities of operating companies.

^{18/} The text of this ordinance is to be found in Conjoncture Economique, op. cit., p. 45.

(b) SOZACOM Holdings

65. The role of SOZACOM in marketing basically consists of seeking out potential clients, identifying their needs, supplying them with the products required and following up these operations. Under current trade conditions, this is largely carried out in user countries most of which are industrialized.

66. In its search for solutions to these problems and in order to maintain relative autonomy from the leading transnational corporations in these areas, SOZACOM has acquired shares in the capital of foreign corporations specializing in this sector and granted certain sales agents exclusive rights. Particular mention should be made of the following companies: 19/

- (i) SOZAREX, a foreign subsidiary entirely owned by SOZACOM whose accounts were consolidated with those of SOZACOM for the first time in 1980;
- (ii) AFRIMET (African Metals Corporation) the exclusive sales agent for SOZACOM, particularly for the sale of cobalt, in North America: in 1979, SOZACOM acquired 14 per cent of AFRIMET capital in the form of 700 shares at a value of US\$ 543 631.08;
- (iii) SOGEMET (Société Générale des Métaux) a public company under French law which is the exclusive sales representative of SOZACOM in France; SOZACOM holds 20 per cent of SOGEMET capital represented by 16 000 shares at a value of 5 334 066 French francs. SOGEMET is a subsidiary of the Société Générale des Minerais (SGM), which in turn is a subsidiary of the Société Générale de Belgique.

(c) Constraints to SOZACOM

67. As stated earlier, on the average over 50 per cent of the Gécamines blister copper production is sent to the refinery of Métallurgie Hoboken, a subsidiary of the Société Générale de Belgique. Once refined, this copper is exported to other user countries by Belgium, which thereby acquires a somewhat unexpected importance in the international copper trade. Export of "Belgian" copper is the responsibility of the Société Générale des Minerais, a subsidiary of the Société Générale de Belgique, as indicated earlier.

68. Under the 1974 agreements between SOZACOM and SGM, the Belgian company remains the sales agent for SOZACOM, even after the nationalization of UMIK; for its part, SOZACOM retains preferential rights as concerns other sales agencies. 20/ Under the terms of the agreements, SGM, in exchange for its services, was to receive 6 per cent of sales for 15 years beginning in 1969, "which in fact represents 100 per cent of profits if the price of copper is poor". 21/

19/ See SOZACOM, Rapport Annuel 1980, p. 66-67

20/ Cf. Ilunga Ilungamba, op. cit., p. 14.

21/ See Comité Zaire, Zaire: le dossier de la recolonisation, (Paris, L'Harmattan, 1978), p. 108.

69. Free choice of agencies indicated above exists only in theory, since SOZACOM is not able to make direct contact with sales agencies in the major countries that consume Zairian copper. In practice, SGM makes these contacts on its own, either through its own subsidiaries or through the intermediary of foreign corporations which it remunerates; they include GIRM in France and Metallgesellschaft in the Federal Republic of Germany.

70. The autonomy of SOZACOM vis-à-vis SGM is therefore limited, and the Zairian copper industry is still closely linked with the production process of transnational corporations.

2. Compagnie Maritime Zairoise and the transport of Zairian copper

71. Freight plays a major role in international commodity trade; it is also the prerogative of the transnational transport corporations. In the case of Zaire, the shipping sector was nationalized with a view to reducing the influence of Transnational Corporations (TNCs). Under the terms of article 15 bis of the Law of 10 July 1974, the Compagnie Maritime Zairoise (CMZ) acquired virtual monopoly over the shipping of exports from the Republic of Zaire. 22/ CMZ, however, is not in a position to take advantage of the provisions of the law, as its current carrying capacity of eight ships, seven freighters and one cargo and passenger vessel is inadequate. 23/ Instead, under the 1975 Agreement between CMZ and the Compagnie Maritime Belge (CMB), an affiliate of the Société Générale de Belgique, the Agence Maritime Internationale (AMIZA), a subsidiary of CMB, continues to be the official transport agent of Zaire. 24/

72. As things stand, AMIZA is thus ... SOZACOM's general transport agent for dispatching mining products to consumer countries: in other words, the Zairian economy still bears the burden of freight costs in foreign currency entailed by such an arrangement, especially in view of the quantity of copper in national exports.

73. One advantageous solution for Zaire would be for CMZ to become the SOZACOM's general transport agent and to entrust only certain operations to AMIZA, as is in fact provided for under the above-mentioned Agreement.

22/ See Yabili Yalala Asani, Code de la Zairianisation, (Mwanga-Hebdo, Lubumbashi, 1975), p. 113.

23/ See Le Portefeuille, op. cit., p. 31.

24/ The text of the CMB-CMZ Agreement is contained in the above-mentioned journal, p. 30.

3. Monopoly of the Société Nationale d'Assurances (SONAS)

74. Insurance is a second area in which Zairian undertakings could strengthen the SOZACOM role in marketing mining products. In a speech made on 30 November 1973, the Zairian Head of State said that "in transport insurance, all exporters of Zairian products will henceforth be prohibited from taking out insurance with any other foreign company". This principle, whereby a monopoly was granted to a Zairian insurance company, was put into practice through article 16 of Law No. 73/009 of 15 June 1974, which states that transport insurance for goods and products exported from Zaire must be taken out in Zaire with SONAS in local currency. 25/

75. Unlike CMZ, SONAS appears to be making effective use of its insurance monopoly, with Gécamines copper and SODIMIZA concentrates insured with it. There remains, of course, the question of sharing risks with transnational corporations in the case of reinsurance, but this is not insurmountable in so far as the choice of partners and the level of commission are always open to negotiation. 25/

76. There is no doubt that use of SONAS services saves the Zairian economy significant amounts of foreign currency which would otherwise have to be paid to transnational corporations to insure copper products.

3. Zairian copper on the international market

1. Transport routes and their problems

77. There are four routes for transporting mining products from Shaba, each with its advantages and disadvantages. 27/

- The Lobito route, which is the shortest and involves no transshipment, seems to be the best; it was however closed for a long time and only re-opened recently.
- The Matadi route is the only one which is situated almost entirely within the country and which, therefore, does not involve any export of currency. However, it entails two transshipments.
- On the Beira route, Likasi is 2 745 km from the sea with only 387 kms. running through Zaire. Although longer than the Lobito route, this route has the advantage of involving no transshipment.
- The Dar-es-Salaam route, like the domestic route, has the disadvantage including two transshipment points at Kalemie and Kigoma.

25/ See Yabili, op. cit., p. 72.

26/ Cf. Ilunga Ilunkamba, op. cit., p. 16.

27/ Cf. Kayala, "Le transport du cuivre au Zaire", in Industrie minière, vol. II, op. cit., p. 79.

78. Ever since the Dilolo-Lobito railway line was closed in September 1975, the Republic of Zaire has experienced serious difficulties in shipping out mining products: the choice of route no longer depends on cost or speed of transport but on possibilities at any given time; furthermore, certain routes appeared to be overloaded.

79. Estimates carried out at the end of June 1981 show that the average number of days for transporting Gécamines products from the plant to the port of shipment ranged from 30 for Matadi, 96 for Dar-es-Salaam, 29 for East London (through Zambia) to 49 for Lobito (compared to 15 in 1974). Added to the long time spent in transit to ports are the periods mining products spend awaiting loading on board ships belonging to the different "conferences" of transnational corporations. The number of days required at the end of July 1981 between departure from Gécamines plants and loading on board ship thus increased to 84 for Matadi, 158 for Dar-es-Salaam, 60 for East London and 132 for Lobito. 28/

80. These delays have a severe effect on the cost of Gécamines products and the corporation's financial resources even before price levels on the international market are taken into account. SODIMIZA itself was heavily constrained by the high cost of rail transport along the southern route while the Dilolo-Lobito railway line was closed, to such a point that the export of its copper concentrates no longer plays for itself and needs state support. 29/

2. Geographical distribution of Zairian copper exports

81. Zaire exports its copper along the above-mentioned transport routes in the form of ores and concentrates, blister and refined copper. The entire output of copper concentrates from SODIMIZA is supplied to the Japanese copper industry. The entire output of Zairian blister copper is exported to four European countries: Belgium, France, the Federal Republic of Germany and Italy. Exports of refined copper are more diversified: while a large amount is still sent to Europe, a sizable quantity is destined to the United States, Brazil, Japan, India, etc. This latter aspect is illustrated in table 10.

3. Price of Zairian copper on international markets

82. Despite the trend observed in 1979 towards increase in consumption in the major industrialized countries and speculative purchases to guard against a possible shortage, prices of principal Zairian products in general and of copper in particular were not favourable in 1980. The non-ferrous metals market,

28/ Cf. Conjoncture économique, op. cit., p. 164.

29/ Ibid., p. 52.

including the copper market, was actually depressed for the whole year, except for a few speculative movements during the first six months. ^{30/} In 1980, the average price for a ton of copper was 54 431 Belgian francs, as compared to BF58 200 in 1979. The maximum price of BF89 503 occurred in February and the minimum price of BF57 503 in June. During the first six months of 1981, prices fluctuated between BF60 000 and BF66 000 per ton. ^{31/}

Table 10. Zairian copper exports according to country of destination
(In metric tons)

Country of destination	1977	1978	1979	1980
1. Ores and concentrates	41 500	35 000	29 600	34 300
2. Blister and anodes including	357 090	301 290	256 164	272 733
- Belgium	344 860	282 784	249 733	
- France	12 010	10 321	16 431	
- Federal Republic of Germany	-	8 060	-	
- Italy	220	125	-	
3. Refined copper including	90 543	103 545	70 041	154 158
- Belgium	5 814	3 813	3 119	12 599
- Brazil	401	7 579	17 455	30 287
- France	5 549	4 749	8 451	15 451
- Federal Republic of Germany	1 550	16 150	4 570	20 503
- Italy	42 848	23 503	12 600	27 905
- Japan	11 393	12 425	12 471	18 543
- Romania	4 000	10 000	2 000	2 000

Source: World Metal Statistics, op. cit., p. 59

83. In the same year, Gécamines, through SOZACOM, carried out 90 per cent of its sales through one-year future-delivery contracts and only 10 per cent through "spot" delivery contracts. ^{32/}

84. As indicated earlier, SOZACOM uses sales agencies, in particular SCM and its subsidiaries, to establish contacts with customers and to conclude contracts.

85. SOZACOM quotations refer to average monthly prices on the major London and New York exchanges and are calculated CIF at the main European ports. SCM sells Zairian copper on the Brussels market, where it is quoted FOB at Olen. Average annual prices for recent years on the Brussels, London and New York markets are shown in the table below.

^{31/} See Conjoncture économique, op. cit., p. 48.

^{32/} See Ilunga Ilunkanga, op. cit., p. 10

Table 11. Prices of electrolytic copper at Brussels, London and New York

Year	Brussels (3F/kg)	London (£/ton)	New York (Cents/lb)
1975	45.4	557	63.6
1976	54.2	781	68.8
1977	47.0	751	65.8
1978	42.9	710	55.5
1979	58.2	936	92.3
1980	64.4	941	101.4

Source: Conjoncture économique, op. cit., p. 51, based on data from AGEFI, Echo de la Bourse, GIG and SOZACOM.

86. Considering the importance of copper to the Zairian economy, fluctuations in its price obviously have serious consequences: they make it impossible to adhere to the objectives of the national economic development plan; they undermine the budgets prepared by the State; they create difficulties for the import of capital goods; they prevent reimbursement of loans from abroad; and so on. The decision-making centres where commodity prices are set naturally disregard these problems, and world commodity prices generally bear little relationship with the real situation in producer countries. 33/

C. Machinery for determining copper prices

1. Ways of selling different types of copper

87. Copper may be sold at various stages in the production process: as ore and concentrate, as blister copper or as refined copper in the form of cathodes, wirebars, cakes, billets and the like. Generally speaking, copper is sold through bilateral contracts concluded between producers and buyers, the latter being traders or even manufacturers. However, some copper is sold directly for cash or on the exchanges. Contracts vary, depending on which of the three types of unwrought copper is being sold. 34/

(a) Sale of concentrates

88. In many cases, copper concentrates are sold through long-term contracts with, in general, a change of ownership. Frequently, these sales are also

33/ See Billerbeck, K., On Negotiating a New Order of the World Copper Market, Berlin, 1975.

34/ This paragraph is based on the contribution from CIPEC, The Marketing and Pricing of Copper, TD/B/IPC/COPPER/AC/L.10, submitted to the Intergovernmental Group of Experts on Copper, March 1977.

linked to the investment of foreign capital to help finance the mining operations that produce the concentrates. This is true, for example, of the export of Zairian concentrates by SODIMIZA to Japanese industries.

(b) Sale of blister copper

89. Most blister copper is sold to refiners. However, a certain amount of this grade of copper is sold directly to traders who, in turn, sell it to refiners. Contracts for the sale of blister copper do not necessarily result in any change of ownership to the extent that "on toll" contracts may be involved. In this case, the manufacturer of the blister copper remains the actual owner of the copper throughout the refining process. This is true, for example, of the Gécamines blister copper that is refined by Métallurgie Hoboken and sold on the Brussels market by SGM.

(c) Sale of refined copper

90. Outside the United States, refined copper is generally sold through one-year contracts between producers and manufacturers, the latter turning the copper into semi-manufactured products or passing it through a more elaborate process. Sales of wirebars and cathodes represent a substantial part of the trade in refined copper.

2. Principal mechanisms for pricing copper

91. Two mechanisms are currently used in setting the price of copper: the "producer price" system and the "market price" system. ^{35/}

(a) Producer price system

92. At present, this system is used only for sales of refined copper within a number of industrialized countries, including the United States, Australia, Japan, France and Canada, where, in some cases, the copper markets are highly integrated, both horizontally and vertically. Here the producer price of refined copper is expressed in local currency and is generally kept at a level close to the London Metal Exchange (LME) price by means of regular adjustments.

93. In the specific case of the United States, the producer price is an average used by the principal producers for sales within American territory; some producers set a price for cathodes, others for wirebars and still others for wire rod. The average American producer price is also closely related to the Canadian producer price but, in most cases, it differs somewhat from the LME and the COMEX (New York Commodity Exchange) prices.

^{35/} See, in particular, R. Bosson and B. Varon, L'industrie minière dans le Tiers Monde, Economica, Paris, 1978, p. 103.

94. It should be noted that there is no producer price for either concentrates or blister copper.

(b) Market price system

95. The reference price used in the market price system is generally the official rate on the LME, whether for spot or future delivery, with the spot price of wirebars having been used as the normal reference price since 1962. The selling price of concentrates and blister copper, though calculated on the basis of the LME price, allows for some adjustments to reflect three factors: deductions for the loss of copper during the smelting process; allowances for impurities or lack thereof; premiums for saleable by-products such as gold or silver.

96. In some cases, the price of refined copper is slightly higher than the LME price, particularly when the copper is of an extremely pure grade or when the copper traded is warehoused on private premises.

97. Compared to other types of sales contracts, "sales contracts for copper do not specify the sales price but instead contain a clause indicating the system for pricing each delivery provided for in the contract".^{36/} Moreover, this clause is very general, as can be seen in the following wording: "the seller's price at the time of delivery".

3. Functioning of the large commodity exchanges

98. Two terminal markets, LME and COMEX, play a major role in the world copper trade.^{37/} They are used by producers, manufacturers, traders, dealers and brokers, as well as speculators for whom hedging represents a main attractions.

(a) Trading on LME

99. Five non-ferrous metals are traded on LME; copper, zinc, lead, tin and silver. Transactions in these metals are conducted over short periods during which only one of the products is traded. In the case of copper, transactions are carried out in 25 ton lots of wirebars or cathodes, with a slight allowance for variations in weight. The official and unofficial published prices include quotations for both types of copper.

100. LME is organized in such a way that all transactions must be either in cash or payable within three months, while contracts are concluded for any of the days within the three-month period.^{38/} However, many members of the floor carry out transactions and conclude deals over longer periods of up to a year.

^{36/} Cf. CIPEC, op. cit., p. 5.

^{37/} See, in particular, the complete work on this subject by Y. Simon, Bourses de commerce et marchés à terme de marchandises (Paris, Dalloz, 1977).

^{38/} Cf. CIPEC, op. cit., annex I, p. 3.

101. Prices on LME have a major and direct influence on prices in copper sales contracts to the extent that the daily settlement prices on LME are determined by transactions conducted on that market. Moreover, LME market prices are widely used to establish selling prices outside the market, a role which is far from negligible. ^{39/} The latter point may be illustrated by the following cases, largely concerned with quotations for Zairian copper by SOZACOM: the prices of deliveries made by a producer to a manufacturer are frequently based on the monthly average of the LME settlement prices; in certain cases, the selling prices quoted by a manufacturer to a client are based on the settlement price for a given day.

(b) Trading on COMEX

102. Three non-ferrous metals are traded on COMEX: copper, silver and gold. Quotations on COMEX do not play as direct or important a role as those on LME in determining world copper prices.

103. In the case of copper transactions, since 1977 contracts have been based on electrolytic cathodes, although other forms of copper are accepted, allowance being made for certain clearly defined price differentials. Each contract is for 25 000 pounds with a slight allowance for variations in weight. Quotations are given in cents (US) per pound for electrolytic cathodes. Copper transactions are conducted for the current calendar month, the two calendar months following and for the months of January, March, May, July and September and December in the 14 months following the current calendar month. ^{40/}

104. Each market day, COMEX publishes the official closing prices based on the volume of transactions for each month of delivery.

D. Role of the Intergovernmental Council for copper exporting countries (CIPEC)

105. Price instability is the main problem faced by copper-producing countries. This constraint, particularly serious in 1966, induced four of the major third-world copper-producing countries, namely Chile, Peru, Zaire and Zambia, meeting in June 1967 in Lusaka, to establish CIPEC. Indonesia joined the group of four in 1975 as a full member while Australia and Papua New Guinea became associate members. Mauritania became a full member of CIPEC in 1976.

106. CIPEC's activities initially focussed on studies and dissemination of reports on the development of the copper industry throughout the world. In its early days CIPEC also acted as a consultant to member countries, both individually and collectively.

^{39/} Cf. Simon, op. cit., p. 35.

^{40/} CIPEC, op. cit., annex II, p. 2.

107. From the preparation of studies, CIPEC has gradually progressed to direct action. In view of the major role played by copper in the development of their respective economies, the four founding members of CIPEC have to varying degrees assumed control of this major sector. Marketing methods under the control of state enterprises in these countries have subsequently been superimposed in nationalized sectors in Chile, Peru, Zaire and Zambia. This is true in particular of SOZACOM in Zaire, which markets products from Gécamines, a nationalized company.

108. With regard to joint action, in 1974 the CIPEC group initiated a plan to reduce exports by 10 per cent in order to influence prices. The rate was later raised to 15 per cent. With the same aim, three of the member countries - Peru, Zaire and Zambia - decided in 1979 to complement the export quota system with a system of production quotas under which production was reduced by 15 per cent. With regard to the persistent problem of copper stocks, CIPEC members have jointly discussed the possibility of producer countries financing and managing such stocks themselves. There was a propitious sequel to this at UNCTAD during its consideration of the integrated programme for commodities: copper appears on the list of products for which a buffer stock system is recommended.

109. On the whole, the results of CIPEC's activities have been modest and can in no respect equal those achieved by OPEC. The organization, similarly to other producers' associations, is hindered by four internal and external factors. ^{41/}

110. Wide-ranging differences among CIPEC member countries are themselves an obstacle to full use of the organization's capacity: Chile and Indonesia have not, for example, participated in the production limitation measures.

111. Certain major copper producers have not joined CIPEC, which greatly weakens the effect of its decisions. It may be noted, in this context, that attempts by CIPEC to influence prices have not had the anticipated effect on the international copper market.

112. The activities of CIPEC have also been constrained by transnational corporations, which continue to dominate the trade, from the producer to the user stages.

113. Although CIPEC controls an appreciable percentage of world copper exports, the pattern of exports varies widely from one CIPEC country to another: Indonesia and Papua New Guinea export only ores and concentrates; Chile and Peru export copper in all its three forms, but most Peruvian exports consist of blister, while Chilean exports mainly comprise refined copper; Australia exports ores, concentrates, refined copper and a small quantity of blister; Zaire exports copper in all three forms, but concentrates account for only a small part; Zambia exports mainly refined copper.

114. The interests of the member countries of CIPEC are thus so divergent that one cannot realistically speak of clear control of a major part of the international copper market by the organization.

^{41/} Rapport de la réunion mixte CEA-UNAPEC sur les associations de producteurs africains, E/CN.14/WP.1/103, Addis Ababa, August 1975.

CHAPTER III

TRANSNATIONAL CORPORATIONS IN THE ZAIRIAN COPPER INDUSTRY

A. Establishment of transnational corporations in the Zairian mining industry1. Role of King Leopold II in establishing the first companies

115. The economic history of Zaire shows that King Leopold II played a decisive role in the establishment of transnational corporations in Zaire through the intermediary of the Congo Free State, of which he was the founder; with the aid of his own resources and the Fondations de la Couronne; and through his close associates and business agents.

116. The manner in which the following companies were set up provides ample proof of this. 42/

(a) Compagnie Congolaise pour le Commerce et l'Industrie (CCCI)

117. The Compagnie Congolaise pour le Commerce et l'Industrie (CCCI), the first Belgian company to carry on economic activities in the territory of Zaire, was established in 1887 by Albert Thys, an aide-de-camp of King Leopold II. CCCI's primary goals were to construct the Lower Zaire railway and promote economic activities of all kinds. In time it became a vast holding company with economic interests in the agricultural, mining, manufacturing, banking and transport sectors.

(b) Compagnie du Katanga (CK)

118. At the request of King Leopold II, CCI set up a number of subsidiaries, including in 1891 the Compagnie du Katanga (CK), which was of major importance. The CK's basic role was to exploit the mines discovered in Katanga. However, in addition to interests in Shaba, the Compagnie du Katanga held interest in numerous companies active throughout the territory of Zaire.

(c) Comité Spécial du Katanga (CSK)

119. In co-operation with the Compagnie du Katanga, in 1900 the Congo Free State founded the first chartered company, the Comité Spécial du Katanga (CSK). A chartered company is a sort of State within a State, in the sense that in addition to many other privileges, the chartered company is empowered as an "assigning authority" to reassign its rights to third parties and to collect fees from the latter.

42/ For this whole question see part 4 of the study by Bongoy Mpekesa, Investissements mixtes au Zaïre, PUZ, Kinshasa, 1974, p. 413.

120. The Congo Free State and the Compagnie du Katanga subsequently entrusted the Comité Spécial du Katanga with the management of their vast property. CSK held a controlling interest in the Compagnie Géologique et Minière des Ingénieurs et Industriels belges (GEOMINES), established in 1910, which was to play a prominent role in mineral prospecting until shortly before Zaire gained independence.

(d) Union Minière du Haut Katanga

121. The discovery of numerous copper deposits in Shaba prompted the Congo Free State and the Comité Spécial du Katanga to establish the Union Minière du Haut Katanga (UMHK) in 1906 to operate the Katanga mines in the place of CSK. 43/ At the outset, the major shareholders in UMHK were CSK, CK, the Société Générale de Belgique (SGB), Tanganyika Concessions Ltd. (TCL), together with a number of scattered holdings. The impact of UMHK and SGB on the Zairian economy is discussed later.

(e) Compagnie du Kassai

122. The Compagnie du Kassai, in which the Congo Free State held 50 per cent of the shares, was established in 1901 in a move to integrate approximately 15 companies: it became the concessionaire of the Kassai region. Attention should be drawn to two major subsidiaries of the Compagnie du Kassai, in view of their subsequent role; they include la Minière du Kassai, which exploited diamond deposits; and la minière d'Aruwimi-Ituri, which operated gold mines.

(f) Société Internationale Forestière et minière du Congo (FORMINIERE)

123. The Société Internationale Forestière et Minière du Congo (FORMINIERE) was also established under the auspices of King Léopold II in 1906. The Congo Free State and the Fondation de la Couronne contributed 50 per cent of the capital of the company in question, and equal proportion of the remainder were contributed by SGB and the Thomas Ryan and Daniel Guggenheim group. Upon establishment the company was granted a concession for 99 years covering a vast area of 3 716 000 hectares of mines, particularly diamond mines.

124. FORMINIERE, an enormous conglomerate, set up numerous subsidiaries that were active in the agricultural, forestry, commercial and mining sectors throughout Zaire. In particular, the company had over-all responsibility for management of the deposits of MIBEKA, the most important producer of industrial diamonds in the world. MIBEKA, a subsidiary of the Compagnie du Chemin de fer du Bas-Congo au Katanga (BCK) established in 1919, to which BCK had transferred its mining rights, itself had an impressive range of companies under its control, including BECEKA-Manganèse and the Diamond Board.

43/ For the historical aspects, see D'Ydewalle, C., L'Union Minière du Haut Katanga - de l'âge colonial à l'indépendance (Paris, Plon, 1960).

(g) Compagnie des Chemins de Fer du Congo Supérieur aux grands Lacs Africains

125. The second chartered company, the Compagnie des Chemins de Fer du Congo Supérieur aux grands lacs Africains (CFL) was set up in 1902 by Baron Empain, at the request of King Léopold II. This business agent working on behalf of the King was to achieve in northern and eastern Zaire what Thys had succeeded in doing in Shaba.

126. In 1923 CFL set up a subsidiary, the Compagnie Minière des Grands Lacs (MGL), to which it entrusted the operation of its mines spread over a concession covering 56 000 km². CFL also established a holding company, the Société Auxiliaire Industrielle et Financière des Grands Lacs Africains (AUXILACSO, which, together with MGL, controlled a number of mining companies in eastern Zaire, including:

- the Société Minière du Lualaba (MILUBA) which exploited tin ore;
- the Société Minière de Nyamukubi (SOMUKUBI);
- the Compagnie Minière du Nord de l'Ituri (COMINOR).

(h) Comité Nations du Kivu (CINKI)

127. The third chartered company was established much later, in 1928, in what was by then the Belgian Congo. This company was the Comité National du Kivu (CINKI), which controlled a vast multipurpose and mineral-rich estate covering 120 000 km². The State and CFL held 50 per cent of this company's capital.

128. In its capacity as a chartered company, CINKI had a major interest in various companies, not only mining entities but also agricultural and real-estate companies in Kivu. 44/

2. Control by foreign financial groups over the new companies

(a) Belgian financial groups

(i) Société Générale de Belgique

129. This major Belgian bank group had a considerable impact on the Zairian economy right from the outset. Reference here is only made to its role in the mining sector, in itself an area of enormous importance.

44/ Both the question of the control of the companies referred to here and the question of the measures of Zairianization, radicalization and denationalization taken in respect of those companies will be discussed later.

130. SGB first controlled the mining sector through large specialized holding companies, after the fashion of CCCI. It is known that CCCI had substantial interests in the Compagnie du Kasai and the Compagnie du Katanga, and that the major source of financing of CCCI was the Banque d'Outre-mer established by Thys. SGB absorbed the Banque d'Outre-mer in 1928 and in doing so, gained control of all CCCI's mining operations.

131. SKC, UMHK's major shareholder, very soon fell under the control of SGB as well. The management of this chartered company was assigned from the outset to trusted agents of SGB, through whom the latter exercised control over its mining, industrial and financial interests, particularly over UMHK. In practice UMHK was managed directly by SGB, even though it held only 4.5 per cent of the capital.

132. SGB, through substantial direct holdings, also controlled other companies such as MIBEKA, a subsidiary of BCK, of which it was the majority shareholder.

133. SGB subsequently entered other branches of activity, particularly those of FORMINIERE, of which it held 25 per cent capital. Despite this minority holding, the board of FORMINIERE was always presided by a representative of SGB, which thereby indirectly exercised control over many diamond-producing and other subsidiaries of FORMINIERE.

(ii) Other Belgian banks

134. Other Belgian financial groups were, of course, active in the mining sector, but they did not carry the same weight as SGB. The interests of some of these groups are nevertheless substantial enough to deserve mention here.

135. The Banque de Bruxelles influenced the Zairian mining sector through the Compagnie financière Africaine (FINAF), which controlled the Société belge de recherches minières en Afrique (REMINA) and the Syndicat Minier Africain (SYNAF).

136. The Empain Group had major interests in the mining sector, although always less substantial than those of SGB. It was able to influence the activities of the two chartered companies of which Baron Edouard Empain was directly or indirectly the founder, namely, CFL and CNKI. It will be recalled that Baron Edouard Empain had a 22 per cent personal share of the capital of CFL, which enabled him to control the latter's subsidiaries, MEL and AUXILACS, and indirectly, the subsidiary mining companies SOMEKUBI and COMINOR. Since CFL had a 30 per cent share in the capital of CNKI, the Empain group was able to exercise control over this "super-company" by sitting on its board of directors.

137. The Société commerciale et minière du Congo (COMINIERE), established in 1910, was under the control of the Banque Josse Allard and the Banque Nagelmackers & Fils.

(b) Non-Belgian financial groups

138. The "open door" principle established at the Berlin Conference in 1885 made it possible for non-Belgian financial groups to invest heavily in Zaire. Only a few instances of American investment are encountered, however, in the mining area.

139. In 1906 King Leopold II granted the American Congo Company exclusive mining exploration rights along Stanley Pool. The American group Thomas Ryan and Daniel Guggenheim was in turn invited by the Sovereign in the same year to contribute to the capital of FORMINIERE. The group remained one of the major shareholders of this company ever since it was founded, with 25 per cent of the capital. ^{45/} Finally, much later, in 1950, the Rockefeller group, through its shares in Tanganyika Concessions Ltd. (TCL), had a right of control over the management of Union Minière du Haut Katanga.

B. Structural changes in the Zairian copper industry1. The end of chartered companies

140. In the 1910s, about ten mining companies were established in Katanga. They were finally reduced to the following three as a result of successive concentrations under the control of CSK, a chartered company:

- ULEK and GEOMINES in the copper sector;
- Société d'exploitation et de recherche minière du Katanga (SERMIKA), with the same structure as CK, operating in the tin sector.

141. The abolition of "assigning authorities", in other words, of chartered companies, had been decided by the Belgian authorities before independence pursuant to the agreements reached at the Conférence de la Table Ronde.

142. The Comité National du Kivu (CNKI) was abolished on 30 May 1960. It held on to its mines and its holdings, however, and became the Société Belgo-Africaine du Kivu (SOBAKI). The compensation to be paid to CNKI and CFL for the takeover by the Congo of the assigning authorities was at first estimated at BF 422 million; the figure was finally reduced to about BF 125 million. ^{46/} SOBAKI, belonging to the Empain group, still retains even today substantial interests in Zaire in a number of forms:

- COFIBEL (ex-AUXILACS), a joint stock company;
- COFIMINES, a mining holding company;
- COGEMIN, an advisory company for the mining sector;
- SOMINKI, a merger in 1975 of various Empain mines in Zaire.

^{45/} The speech made by the President of the Republic on 30 November 1973 makes specific mention of the case of FORMINIERE, cf. Yabili, op. cit., p. 11-12.

^{46/} Cf. Société Belgo-Africaine du Kivu, Rapports au Conseil d'administration, 1960 financial year, p. 9.

143. The same operation was carried out with the Comité Spécial du Katanga (CSK) three days prior to the independence of Zaire. CSK was dissolved by decree on 27 June 1960. As in the previous case, the mining rights not yet given up by CSK were vested in the new Congolese State for an agreed consideration estimated at BF 1 000 million. CSK's wealth in stocks and shares, particularly its holdings in Union Minière, was distributed between the Compagnie du Katanga (one third) and the new State of the Congo (two thirds).

144. These two agreements, worked out by technical experts at the Table Ronde, were later questioned, however, by the Congolese authorities, and, incidentally, by the Katangese secession. Endless negotiations regarding the Belgian-Congolese claims dispute brought no satisfactory solution.

145. Some hold that elimination of CSK in fact deprived the Congolese State from the moment it became independent of its right of control over Union Minière, in other words, of the right of control over the economy. It is estimated that nearly 70 per cent of the Congolese economy was controlled by SGB and that much of the new State's resources derived from Union Minière, which henceforth fell completely into the lap of SGB. 47/

146. Of three chartered companies, only the Compagnie des Chemins de fer des Grands Lacs (CGL), in which the Congolese State held only 25 per cent interest, was not dissolved. On the contrary, on 15 June 1960, its activities were extended to 1990.

147. It is estimated that this form of last-minute operation was probably the reason for subsequent restrictions imposed by Zaire.

2. Nationalization of the mining sector

148. The principle of sovereignty and control over natural resources by the Zairian State is described at length in the presidential speech of 30 November 1973. Its features are highlighted in greater detail in the following chapter, section D, "Position of the Zairian State with regard to control of transnational corporations."

149. The principle has a number of precedents, some of which are mentioned here: 48/

- The royal decree of 21 September 1891 stipulated that the fruits and produce from unoccupied lands were the exclusive property of the State;
- The Bakajika Law of 7 June 1966 guaranteed "the Domestic Republic of Congo full property rights over its lands and complete sovereignty in the granting of land, forest and mining rights throughout its territory";
- The Constitution of 24 June 1967 itself in article 14 has clearly reiterated such a claim in the following terms: "The soil and subsoil of Zaire as well as their natural products belong to the State".

47/ See Comité Zaire, op. cit., p. 38.

48/ Cf. Lukombe Nghenda, op. cit., p. 24.

3. Participation in international consortia

150. The concept of "joint ventures" is not a new one in Zaire, as Bongoy points out in his doctoral thesis. ^{49/}

151. As early as the period of the Congo Free State during the reign of Leopold, FORMINIERE, the Compagnie du Kasai and the Union Minière already conducted joint ventures. A number of these had also been in operation in the Belgian Congo and had been of some importance: they included the well-known Comité national du Kivu.

152. In present-day Zaire, the concept of mixed investments has expanded further, particularly with regard to the copper industry. In this connexion, particular mention should be made of the establishment of SORIZA in 1969 and of SMTF in 1970: 20 per cent of the capital of both these companies is owned by the State of Zaire. ^{50/}

153. The State has numerous additional holdings in other sectors of the economy: a special department, the Investments Department, had to be set up in order to manage this sizable "portfolio".

C. Profile of major corporations involved in the Zairian copper industry

1. Générale des Carrières et des Minerais (Gécamines)

(a) Background

154. Gécamines, a state corporation with a capital of 259 600 zaires (z) came about as a result of the nationalization of the Union Minière du Haut Katanga in 1967. ^{51/} The corporation, which has the longest history of economic activity in the Republic of Zaire, is primarily engaged in ore extraction and concentration and copper metallurgy. Until 1972 Gécamines alone was responsible for Zaire's entire copper production; today it remains the main producer of copper ore.

155. In addition to copper, Gécamines produces cobalt, zinc and articles manufactured from these ores as well as coal, sulphuric acid, cement and maize.

156. The Gécamines mining concession covers an area of 12 000 km² on both sides of the Lubumbashi-Ikasi-Kolwezi highway and extends for a distance of approximately 300 kilometres. The principal reserves are located at the Kolwezi site, where the ore extracted represents more than 70 per cent of the total amount of ore mined by the corporation.

^{49/} See Bongoy, *op. cit.*, p. 10-11, and the subtitle of his work.

^{50/} These companies will be described in paragraph 3 below; see Kintameu Mafuku, Transnational Corporations in the Copper Industry in Zaire, ECA, Addis Ababa, 1979.

^{51/} Compensation following the nationalization of Union Minière was estimated at BF 4 billion, to which should be added the facilities provided to SGM. See Kovar, R., "La congolisation de l'UMIK" in Annuaire français de Droit international. CNRS, Paris, 1967, p. 743, and Verwilghen, M., "Les principaux aspects juridiques de la nationalisation de l'UMIK" in Revue belge de Droit international, vol. VI, 1970.

(b) Activity indicators

157. The following data on Gécamines activities in recent years illustrates its turnover, production, cash flow, income, the amount paid to the State in the form of taxes and the growth in the size of its work force.

Table 12. Main indicators of Gécamines

Indicators	1977	1978	1979	1980
1. Turnover (in 106 zaires)				
- Total	502.3	977.2	2 582.7	4 113.2
- Copper sales	378.8	385.8	958.8	2 472.8
2. Production (in thousands of tons)				
- Prod. of copper	450.9	391.3	369.8	425.7
3. Cash flow (in 106 zaires)				
- Gross	112.5	452.8	1 223.8	1 421.9
- Net	44.0	244.7	375.2	984.2
4. Net income (in 106 zaires)				
- Total	71.9	323.2	1 064.3	1 139.2
- Rues and taxis	58.5	178.1	352.6	447.7
- Net income of Gécamines	3.4	145.1	211.7	691.5
5. Personnel				
- Total	35 171	34 247	35 818	38 408
- Labour unskilled	32 149	31 560	32 945	35 149
- African supervisory staff	1 790	1 924	2 099	2 260
- Expatriate supervisory staff	1 232	663	773	999

Source: Conjoncture économique, op. cit., p. 156 and Gécamines, Rapport annuel.

2. Société de Développement Industriel et Minier du Zaïre (SODIMIN)

(a) Background

158. In January 1967, a general mining exploration licence was granted to a Japanese firm, Nippon Mining Company Limited. The licence was complemented in November 1967 by conclusion of a mining agreement between that company and the

Democratic Republic of the Congo, which later became Zaire. ^{52/} The Société de Développement Industriel et Minier du Congo (SODIMICO), whose name was subsequently changed to SODIMIZA, was established in April 1969 with a view to implementing the above agreement and its annexed protocol.

159. Nippon Mining subsequently associated itself with other Japanese financial groups in order to set up a mining consortium, the Compagnie de Développement Minier du Zaire (CODEMIZA), to which all the rights and obligations of Nippon Mining were subsequently transferred.

(b) Capital structure

160. SODIMIZA was established in April 1969 as a Zairian corporation registered in Zaire with limited liability, for a period of 70 years which was renewable. The fixed capital, initially set at Z100 000, was raised to Z1 500 000 in October 1971 and to Z3 million in December 1972. ^{53/}

161. The breakdown of shares constituting SODIMIZA's capital at the outset was as follows:

	<u>Shares</u>	<u>Per cent</u>
- Republic of Zaire	45 000	15
- Compagnie de Développement Minier du Zaire	102 000	34
- Nippon Mining Ltd.	87 210	29.07
- Sumitomo Metal Mining Co. Ltd.	15 300	5.10
- Toho Zinc Ltd.	15 300	5.10
- Mitsui Mining and Smelting Co. Ltd.	15 300	5.10
- Furukawa Mining Ltd.	12 240	4.08
- Nissho-Iwai Ltd.	7 650	2.55

162. The share of Zaire in the capital of the corporation was later raised to 20 per cent; furthermore, it was agreed that its level would never fall below 15 per cent even if the capital were increased.

163. According to the terms of the agreement, the State of Zaire also has the right to buy shares in the corporation from the Japanese associates up to 50 per cent of the nominal capital. That clause, however, is valid only from the time of establishment of the company to the end of its fifth year of existence.

^{52/} Cf. Mulumba Lukoji, "Structures de consortiums internationaux miniers au Zaire, in Industrie Minière, vol. I, op. cit., pp. 62 et seq.

^{53/} Cf. Hirota and Fukushima, "Origine et développement des activités minières de la SODIMIZA au Shaba", in Industrie Minière, vol. II, op. cit., pp. 33 et seq.

(c) Development factors

164. SODIMIZA has an exclusive exploration zone of 5 860 km² and two concessions, of 578 km² at Musoshi and 174 km² at Kinsenda. In 1980, the company mined 1 296 000 tons of untreated ore, of which about 1 million tons came from the Musoshi and the remainder from the Kinsenda mines. In the same year, the corporation's concentrator produced 93 000 tons of concentrate as compared to 81 000 tons in 1979, an increase of 14.8 per cent. The average copper content was around 35.5 per cent. 54/

165. As pointed out already, the closing of the Dilolo-Lobito railway line has long impeded SODIMIZA operations: transport costs for merchandise as bulky as copper concentrates substantially swells the price of the product. The following table illustrates SODIMIZA's level of operations in recent years.

Table 13. Indicators of SODIMIZA's operations

Indicators	1978	1979	1980
1. Turnover (in thousands of zaires)	23 145.4	59 475.5	141 998.5
2. Production (in thousands of tons)			
- Processed ore	1 325	1 123	1 296
- Concentrates obtained	39	81	93
- Metal content	32.6	29.5	34.1
3. Manpower			
- Unskilled labour	-	-	3 078
- Skilled labour	-	-	118
- Zairian supervisory staff	-	-	98
- Expatriate supervisory staff	-	-	123

Source: Conjoncture Economique, op. cit., pp. 168 and 170.

3. Société Minière du Tanke-Tuncuruna (SMTT)

166. In September 1970, the state of Zaïre signed an agreement with a consortium of American, British, Japanese and French financial interests initially composed of the following: the American group Amoco Mineral Company, member of Standard Group of India; Leon Tempelman and Son an Anglo-American consortium; the British group Charter Consolidated Ltd., part of an Anglo-American group; the Japanese group Mitsui Company; and the French group BRGM (Bureau de Recherches Géologiques et Minières). The Banque de Paris et des Pays-Bas also held shares in the consortium.

54/ Cf. Conjoncture économique, op. cit., p. 170

167. The state of Zaire and the above-mentioned consortium founded the Société Minière de Tenke-Fungurume (SMTF) to exploit the rich copper deposits discovered by BRGM. The concession covered 1 425 km², formerly belonging to UMHK but outside Gécamines territory. According to experts, these deposits are one of the largest copper reserves in the world: they comprise some 60 million tons with a very high copper content.

168. The nominal capital of SMTF amounted to 22 million and was divided as follows among the shareholders:

	<u>Shares</u>	<u>Per cent</u>
Republic of Zaire	400 000	20
AMOCO (Standard Oil of Indiana)	560 000	28
Charter Consolidated Ltd.	560 000	28
BRGM	70 000	3.5
Mitsui	280 000	14
Leon Tempelman	60 000	3
Omnium des mines (Paribas)	70 000	3.5

169. Since the restructuring of SMTF in 1980, COGEMA a French public company subsidiary of the Commissariat français à l'énergie atomique (French Atomic Energy Commission) has become the prime contractor; in addition, Zaire's shares have been transferred to Gécamines.

170. The SMTF capital is now distributed as follows: 55/

	<u>Per cent</u>
Gécamines	20
Charter Consolidated Ltd.	28
COGEMA	28
Mitsui and Co., Ltd., Japan	14
BRGM	6.5
Omnium des mines (Paribas)	0.5
Leon Tempelman	3.0

171. The level of investments required and the technical difficulties encountered in mining for a long time delayed effective execution of the work. In view of these difficulties, the Board of Directors of SMTF decided to submit a new project to exploit the deposits toward the end of the first half of 1981.

4. Société Internationale des Mines du Zaire (SIMZ)

172. SIMZ was established by the same international consortium which set up the Société de Fungurume: its purpose, however, is limited to geological studies on behalf of the consortium; SMTF would mine the deposits belonging to the group.

55/ Cf. Conjoncture économique, op. cit., p. 167.

173. In 1970 the Government of Zaire granted SIMZ an exclusive exploration zone of 30 592 km², half of which was subsequently returned to the State. SIMZ has not conducted exploratory work since 1980.

174. The capital of SIMZ, like that of SIMT, was set at 22 million; arrangements for association between the State of Zaire and the foreign consortium are identical in the two corporations.

175. SIMZ share capital is divided among the various partners in the following manner:

	<u>Shares</u>	<u>Per cent</u>
Republic of Zaire	75 000	20
AMOCO (Standard Oil of Indiana)	106 363	28.36
Charter	106 364	28.36
BRGM	25 591	7.09
Mitsui	53 182	14.18
Leon Tempelman	7 500	2.00

5. Bureau de Recherches Géologiques et Minières (BRGM)

176. BRGM, a French company which specializes in mining exploration, conducts numerous operations in the former French territories in Africa.

177. A 1969 agreement between the State of Zaire and BRGM entrusts the latter with a general survey of the mineral resources of all the regions of the country. Under this agreement, which covers the period 1970-1981, in the event deposits are found, BRGM is given exclusive rights for one year to prospect and submit partners and mining companies. It is within this framework that BRGM participates, for example, in the Fungurume consortium.

178. For exploration purposes, BRGM has established two subsidiaries to carry out work on the copper prospects located in two particularly promising areas, the Kapulo and Dikusuhi regions. ^{55/} The companies are the Société Minière et de Développement Géologique (SMDG) and the Société Minière des Nobe (SOMINA).

6. Shabamines and Falconbridge of Africa Zaire Limited

179. In the 1970s, nine prospecting licences covering an area of 225 km² in Lower Zaire were granted to the Canadian company Falconbridge through its two subsidiaries, Shabamines and Falconbridge of Africa Zaire Limited. The company, however, focussed its operations on copper deposits located north of Lake Moero, which had been discovered earlier by SERUKAT and had good economic prospects.

180. The capital of Shabamines, set up in February 1971, was owned 50 per cent by Falconbridge and 50 per cent by SOMIZA (a Zairian mining firm). The parent company was also involved in negotiating with the Zairian authorities to draw up a mineral exploration agreement, the draft of which allotted 20 per cent of the capital to the State of Zaire.

^{55/} Cf. ECA, op. cit., p. 45.

CHAPTER IV

PROFIT SHARING ARRANGEMENTS BETWEEN THE GOVERNMENT OF ZAIRE AND TRANSNATIONAL CORPORATIONS

A. Zairian regulation of mining operations

1. Basic general principles

181. The Ordinance of May 1967 re-affirmed the principle according to which the mines "belong to the Nation and constitute a special public domain". The same ordinance put an end to the monopoly enjoyed by several companies in exploration and mining which had been granted earlier by colonial authorities.

2. Different types of mining systems ^{57/}

(a) General law mining system

182. This system provides for three types of licences for prospective foreign investors in the mining sector:

- Application for personal authorization to engage in prospecting;
- Application for an exploration licence;
- Application for a mining licence and for a concession.

183. In addition, the Zairian mining code also takes account of the time element: the mining licence is granted for a period of five years and is renewable three times for an equal period; the concession, on the other hand, is granted for 30 year period, renewable twice for a period of 20 years.

(b) Agreement of mining system

184. This system is based on a special "power" vested in the State to grant, through agreement, exclusive exploration rights, mining licences and concessions over one or several specified areas. The agreement system is primarily designed to promote the flow of new capital into the mining sector. The State provides investors with the necessary facilities and grants them special privileges during the working of their concessions.

^{57/} See Manzila Lutumbu, "Droit Minier Zairois", in Industrie Minière, Vol. I., op. cit., p. 15.

185. A study of the SODIMIZA case later in this chapter shows the scope of this system.

3. Relations between the Zairian State and mine concessionaires

186. Although it guarantees their rights, particularly exclusive mining rights within zones of operations, the State also imposes certain obligations on mine concessions:

- The State may acquire "by prior right and at a fair price all or part of the mining production" of any mine operator;
- The State may "oblige the mine operators to comply with all measures taken in the general interest to increase, limit or regulate production, centralize the sale of products or reserve products in order to supply a national industry";
- The State may place the mining operations of any investor under the supervision and control of the Department of Mines.

B. Taxation of mining operations

187. Mining legislation occupies a central position in Zairian legislation by virtue of the fact that the national economy is heavily dependent on the mining industry. Mining companies are thus liable not only to the general taxation applicable to all companies, but also to special taxation for the mining sector.

188. The following outlines the provisions applicable to mining companies alone:

(a) Service fee

189. A service fee is levied when an application is made for the various prospecting, exploration and mining licences or when such licences are renewed.

(b) Surface rent

190. An annual payment is theoretically levied for the benefit of those entitled to the land according to custom.

(c) Subsoil tax

191. Under the Zairian tax system, any mining operation must hand over to the state "10 per cent of its annual mining output, in the processing state in which it is normally exported". This provision represents a genuine innovation and demonstrates the clear will of the Zairian state to exercise full sovereignty over the exploitation of minerals contained in its subsoil. This provision has not, however, been effectively applied yet.

(d) Exemption from taxation

192. In order to encourage mining research, article 81 of the Ordinance of May 1967 provides for "exemption from income tax on that part of the profits applied to the prospecting, exploration and development of mineral deposits."

C. Special provisions under the investment codes1. The 1965 Investment Code ^{58/}

193. The 1965 Investment Code consists of three types of systems.

(a) Ordinary law system

194. In view of events which had taken place around 1965, this system was an attempt to create a favourable, psychological atmosphere for investment. In particular, it was aimed at establishing legal protection and an investment promotion framework for all enterprises, whether old or new, with no counterpart concessions to the State being required on their part.

195. Articles 5 and 6 of the Code stipulate that for reasons of stability, expropriations - in both the broad and the narrow sense of the term - are prohibited. Where expropriations proved necessary - "for a good reason and for the common good" - they would have to be carried out in accordance with the law, and compensation would be paid in the currency of the foreign country of origin.

196. Discrimination, whether de jure or de facto, is prohibited. This provision carries on in practice the old "open door" principle. For purposes of investment promotion, the ordinary law system provides three substantial benefits:

- Exemption from import duties: all capital equipment intended for new enterprises or for extensions to existing enterprises is exempt from these duties;
- Customs protection against foreign competition in order to protect locally produced goods;
- Freedom of capital transfer: the State guarantees that all capital and income deriving there from may be transferred.

(b) Preferential system

197. The 1965 Code provides for two types of preferential system: the priority system and the contractual system.

(i) Priority system

198. The 1965 Code applies this system to projects which make a substantial contribution to the national economy. Enterprises admitted under this régime enjoy the following advantages:

^{58/} See Bongoy, op. cit., p. 151, concerning this Code.

- The enterprise is given preference in obtaining foreign currency when importing equipment or transferring investment income;
- As far as taxation is concerned, the enterprise is entitled to exemptions from and reductions in direct taxes for five years;
- Thirty per cent of taxable profits are exempt from the business tax.

(ii) Contractual system

199. An enterprise applying under this system must make a fundamental contribution to the national economy. The main criteria, in addition to those required by the previous system, concern:

- Level of investment;
- Number of people employed;
- Effects of training.

200. In return, the State gives enterprises operating under this system special guarantees over and above those provided for in the ordinary law and priority systems.

201. UMHK was one of the enterprises benefiting from this first Zairian investment code: this explains why, when it was nationalized, those in charge were able to protest vigorously by invoking certain provisions in the Code, particularly those concerning expropriation and compensation.

202. A main issue that has remained unresolved is the extent to which the very liberal 1965 investment code was able to bring in a real flow of new capital. Available information indicates a gap between the objectives and achievements of the Code. However, some have attributed failure not to the Code itself, but to the prevailing political and economic situation of the time; moreover, "given the disintegration and imbalance of the economy, the Code could not work miracles on its own". 59/

2. The 1969 Investment Code^{50/}

203. The new 1969 Investment code had three main objectives:

- To promote investments aimed at establishment of new enterprises and the extension and modernization of existing ones;
- To stimulate mobilization of domestic financial resources by directing them towards productive investments;
- To promote investment of foreign capital by giving special transfer guarantees.

^{59/} See Katanga Mukumadi, "L'évolution de la législation zairoise en matière d'investissements et son incidence économique", Cahiers Economiques et Sociaux, Vol. IX, 1971, p. 42.

^{50/} For the text, see Department of Economic Affairs, Le Guide de l'investisseur, (no date), p. 131, and the comments in Katanga Mukumadi, "Le Code des investissements et l'industrie minière au Zaïre," in Industrie minière, Vol. I, op. cit., p. 21.

204. The following systems are provided for under this second investment code:

(a) General system

205. Admission to this system is no longer automatic, as had been the case with the 1965 code, but selective. The system is reserved for existing and future enterprises which have obtained prior approval.

206. Under the system approved enterprises are granted a whole range of tax benefits, the main ones being:

- Exemption from tax on profits for 5 years;
- Exemption from tax on distributed dividends for 5 years;
- Exemption from import duties and the general turnover tax.

(b) Contractual system

207. This system is open to investments which meet conditions of the general system but which are in addition of major value for the development of the country because of:

- Their size;
- Their long-term profitability.

(c) Partial exemption system

208. This system, instituted in 1974 to supplement the 1969 Code, applies only to investments made on the basis of self-financing. ^{51/} Under it, the portion of business tax applied to profits which are to be re-invested is reduced by 50 per cent.

209. In articles 21 and 22 of the second Zairian Investment Code, moreover, particular guarantees are provided for foreign investment, inter alia: authorization for annual transfer of the income of foreign promoters; transfer of their shares in case of shutdown or liquidation; fifty per cent reduction in the business tax applied to re-invested profits; and exemption of mineral deposits from the business tax - a specific advantage given to mining companies operating in Zaire.

210. As in the first Code, the new Code offers numerous fiscal advantages to prospective investors: experience shows, however, that these advantages only play a secondary role in the decision to invest. In fact, political climate and monetary stability appear to take precedence in that connexion. ^{52/}

^{51/} Cf. Service Présidentiel d'Etudes, Les possibilités d'industrialisation du Zaire, December 1977, p. 245.

^{52/} Cf. Katanga, "L'évolution de la législation zairoise...", op. cit., p. 51.

D. Position of the Zairian State with regard to control of transnational corporations

1. Zairianization

211. Zairianization measures were not adopted all at once, but have succeeded each other over the years. The concept of Zairianization originated in 1966 with the establishment of SONAS, Gécamines, Air Zaire, and others.

212. For purposes of reaffirming the country's economic independence, the Zairian State has gone further with measures announced in the speech of 30 November 1973. ^{53/}

(a) Fundamental principles of Zairianization of mines

213. The take-over by the Zairian State of major mining production and marketing units is in a special category among the general measures of Zairianization. In summary:

- In the mining field, any concession granted to an investor shall entitle the Zairian State to a 50 per cent participation;
- All chartered companies shall become the sole property of the Zairian State;
- The application of Ordinance 01 bis 57 of 1 January 1967 relating to subsidiaries of Union Minière shall be interpreted only as follows: these subsidiaries shall be 100 per cent Zairian, as Gécamines is now;
- By 1980, 100 per cent of the refining of all Zairian copper must be carried out in Zaire;
- In field of marketing, strict control of the destination of Zairian copper must be established.

(b) Consolidation of principles of Zairianization of mines

(i) Gécamines

214. General management is in the hands of a Zairian, ^{54/} some of the subsidiaries of the Union Minière have been dissolved, while others have been taken over by Gécamines and the Société Nationale d'Electricité; control of marketing has been ensured by the establishment of SOZACOM.

(ii) Mining sector in general

215. All new mining agreements include a special clause obliging the beneficiary to upgrade metallurgically its mining product; each mining agreement must specify that in employment matters, where knowledge and professional ability are equal, priority shall be given to the Zairian candidate; the State is henceforth guaranteed, without payment, 20 per cent of the shares in any new mining company officially

^{53/} Only those measures directly affecting mining are discussed here.

^{54/} Until May 1982.

authorized, these shares being in exchange for the mining titles granted; similarly, after a mining company has been operating for five years, the State receives a guaranteed amount of 12.5 per cent of the value of products exported or, if net profits are higher, of 50 per cent of the latter.

2. Reasons for "radicalization"

216. In the pursuit of greater control over the national economy, the State intended through radicalization, as enhanced form of nationalization, to "exercise a real right of ownership rather than a right of control" over the major units of production and distribution and major economic activities. ^{65/}

217. Some now believe that radicalization which followed 1973 nationalization measures, had the purpose of "correcting certain inadequate cases of the application of Zairianization measures" at two levels: the Zairianization of units which had not yet been Zairianized; and correcting failings of beneficiaries of Zairianization.

218. Radicalization was in fact often viewed in the latter context as a reaction to certain unfortunate consequences of the first Zairianization measures: for example, Zairianization replaced foreign capitalists with a new class of rich Zairians in whose hands a number of businesses were concentrated; the management exercised by a large number of new Zairian owners, moreover, seemed to be less than adequate, all the more so since the companies handed over were large-scale enterprises; many State officials devoted themselves increasingly to businesses acquired through Zairianization rather than to the business of Government.

219. The take-over by the State of major economic units also raised the problem of organization, management and control of the companies acquired: it was therefore necessary to find a new path.

3. Significance of denationalization

220. The need for denationalization seems from the late 1970s on to have arisen for many reasons: ^{66/} failure of Zairians to perceive the importance of the objectives set by the Head of State in choosing both Zairianization and radicalization; lack of financial means to compensate former owners as promised by the President of the Republic; pressure from foreign powers with economic interests in Zaire; economic disruption which followed the Zairianization and radicalization measures; and search for a means of stabilising the Zairian economy.

221. Denationalization of property and production units was in fact officially presented as a means of stabilizing the national economy. Initially, denationalization of 30 to 40 per cent was chosen solely for radicalized companies, not for those

^{65/} See Lukombe Nghenda, op. cit., p. 9.

^{66/} Ibid., p. 46.

which had been Zairianized in the strict sense of the word. This was the first stage of stabilization. During the second stage of stabilization, full denationalization — a return to former owners of Zairianized or radicalized enterprises — of up to 50 per cent was authorized.

222. The Zairian State still reserves for itself certain areas of national interest, which thus remain immune from denationalization: this is the case, inter alia, of mines. "Reserved" areas are not excluded from foreign investment, but the State retains the right to hold shares in these sectors, denying all Zairian private citizens this right.

223. Some Zairian economists have taken the view that denationalization measures alone could not properly set the stage for the recovery or restabilization of the nation's economy. ^{67/} In any event, the reaction of investors to these measures, for example in the mining sector, does not appear to have been of far-reaching effect.

E. Outline of basic features in an agreement: the case of SODIZIMA

224. The Agreement between the Zairian Government and SODIZIMA gave the latter a number of tax and financial benefits over three production periods. In return, the corporation contracted with Zairian authorities to carry out certain investment programmes in Zaïre.

1. Tax mitigation measures

(a) Period of geological research and prospecting

225. SODOZIMA was accorded exemption from import and export duty on all materials necessary for its research and on batches of ore sent outside the country for analysis; it was also granted exemption from all duties, taxes or charges payable either in cash or in kind to the State, to local bodies or to chiefdoms.

(b) Period between the start of mining activities and the fifth year of mining (five years)

226. The corporation was accorded the following benefits for this period:

- Exemption from duties and taxes payable to the State, to local bodies or to chiefdoms, as in the preceding period;
- Exemption from import duty on materials and supplies intended for the investment programmes called for by the mining operations;
- Exemption from export duty on ore concentrates and processed metals.

^{67/} Ibid., p. 46.

(c) Period between the sixth and twentieth years of mining
(15 years)

227. The corporation was accorded the following benefits for this period:

- Agreement assured SODIMIZA stable taxes and duties for these 15 years, in other words, taxes and duties equivalent to those applicable at the time the Agreement was signed;
- The corporation was permitted to opt for more favourable tax arrangements announced during the aforementioned period;
- The Agreement provided for preferential export-duty rates for ore concentrates and processed metals during this 15 year period: between the sixth and tenth years of mining, the rate will be 25 per cent; between the sixteenth and twentieth years, the rate will increase to 75 per cent.

2. Special financial terms

228. In addition to tax mitigation, the Agreement accorded SODIMIZA certain financial benefits. The Zairian State undertook not to impose, during these 20 years of mining, any restrictions on the activities of SODIMIZA or its subsidiaries with respect to:

- The export from Zaire of the returns derived from these activities;
- The transfer of dividends or any other profits from mining operations;
- Salary transfers for expatriate staff of the corporation or its subsidiaries;
- The use by the corporation or its subsidiaries of foreign-currency export earnings;
- The transfer of the proceeds of the sale of shares by the Japanese associates.

3. Commitments made in return for the benefits accorded

229. In return for the tax and financial benefits accorded by the Zairian State, SODIMIZA undertook:

- To carry out, by 1973, the investment programmes necessary for the production of 40 000 tons of copper per annum;
- To construct metal-processing plants and refineries to convert concentrates with a grade of 50 per cent into electrolytic copper with a grade higher than 99.5 per cent.

CONCLUSION

230. The greater part of Zaire's copper industry is nationalized today. In this respect, the Zairian Government's determined efforts can be considered a success. The present review shows, however, that the sector is actually still controlled by transnational corporations at three focal points: Zaire's copper industry is still characterized by preponderance of highly skilled foreign technicians who are indispensable for the effective functioning of the sector; a sizeable amount of Zairian ore is still being refined at Hoboken; and the marketing of copper products is still largely controlled by GCM or its subsidiaries.

231. With regard to companies under contract, association between foreign interests and the Zairian State does not go beyond participation in the share capital. The fact that the Zairian Government is a shareholder - and still a minority shareholder at that - does not mean that it has control over the production process or the companies' marketing policy: instead, the companies under contract are beyond the control of the Zairian authorities and are actually controlled by foreign consortia. The year-end dividend entitlement enjoyed by the Zairian State as a shareholder of these companies does not seem to be an adequate quid pro quo.

232. An examination of the tax and financial benefits extended to transnational corporations active in the copper industry through mining regulations, tax legislation or the Zairian investment codes, shows that these benefits are, to say the least, exorbitant in relation to those received in return by the Zairian State.

233. A thorough quantitative assessment of the results of the State participation in international consortia still remains to be done. On the basis of current empirical data, however, the Zairian side has earned little.

234. Zairianization and radicalization measures, as instruments enabling the State to control national resources, have aroused much interest in Zaire and elsewhere. Results, however, have admittedly fallen short of expectations: internal and external constraints have had a far greater impact than the Zairian will to break new ground in the effort to control transnational corporations.

235. Despite this, some now believe that revisions of these arrangements through denationalization were necessary, inasmuch as the recovery of the nation's economy depended on them.

BIBLIOGRAPHY

I. Documents of international organizations

1. ECA, Mineral raw materials in Africa: copper, E/CN.14/MIN.60/3.5, September 1960.
2. ECA/UNAPEC, Rapport de la réunion mixte CEA-UNAPEC sur les associations de producteurs africains, E/CN.14/MP.1/103, August 1976.
3. CIPEC, La commercialisation et la fixation des prix du cuivre, TD/8/IPC/COPPER/AC/L.10, March 1977.
4. CIPEC, Outlook for Development in the World Copper Industry, March 1977.
5. UNCTC, Transnational Corporations in the Copper Industry, ST/CTC/21, New York, 1981.
6. UNIDO, Mineral Processing in Developing Countries, New York, 1980.

II. Zairian official documents

1. Commissariat général au Plan, Plan Mobutu, Programme de relance économique, 1981.
2. Commissariat général au Plan, Synthèse économique 1980, 1981.
3. Département de l'Economie nationale, Conjoncture économique, 1981.
4. Département de l'Economie nationale, Le Guide de l'investisseur, (no date).
5. Ministère de l'Economie nationale, Possibilités d'une industrie de transformation du cuivre au Congo, (no date).
6. Service présidentiel d'Etudes, Les possibilités d'industrialisation du Zaïre, 1977.

III. Published works, articles and contributions

1. Billerbeck, K., On Negotiating a New Order of the World Copper Market, GDI, Berlin, 1975.
2. Bongoy Mpekosa, Investissements mixtes au Zaïre, Joint ventures pour la période de transition, Presses Universitaires du Zaïre, Kinshasa, 1974.
3. Bosson, R. and Varon, B., L'industrie minière dans le Tiers Monde, Economica, Paris, 1976.

4. Charbonnezux, J., "Mines et développement", Industries et travaux d'Outremer, Paris, May 1980.
5. Charles River Associates, Détermination des éléments économiques possibles d'un arrangement international sur le cuivre, étude pour la CNUCED, TD/B/IPC/COPPER/AC/L.42, November 1977.
6. Comité Zaire, Zaire, le dossier de la récolonisation, L'Harmattan, Paris, 1978.
7. Defrene, M., "La métallurgie du cuivre pratiqués par la Gécamines au Shaba", Industrie minière et développement au Zaire, Volume II, PUZ, Kinshasa, 1976, p. 43.
8. D'Ydewalle C., L'Union minière du Haut Katanga, de l'âge colonial à l'indépendance, Plon, Paris, 1960.
9. Gonzalez, J., Rapport technique - Usine de raffinage électrolytique de cuivre au Zaire, UNIDO, February 1982.
10. Hamid, M.G., The Copper Industry and its perspectives in Africa, IDEP, Dakar, July 1978.
11. Hirota and Fukushima, "Origine et développement des activités minières de la Sodimiza au Shaba", in Industrie minière, Volume II, p. 33.
12. Iluga Ilunkamba, Cuivre, technologie et dépendance au Zaire, Séminaire CODESRIA/UNITAR, Addis Ababa, August 1979.
13. Katanga Mukum Adi, "L'évolution de la législation zairoise en matière d'investissements et son incidence économique", Cahiers économiques et sociaux, Vol. IX, Kinshasa, 1971.
14. Katanga Mukumadi, "Le code des investissements et l'industrie minière du Zaire", in Industrie minière et développement au Zaire, Vol. I, PUZ, Kinshasa, 1973, p. 21.
15. Kayala, "Le transport du cuivre au Zaire", in Industrie minière, Vol. II, p. 79.
16. Kintambu Mafuku, Transnational Corporations in the Copper Industry in Zaire, ECA, Joint ECA/CTC Unit, Working Paper No. 9, 1979.
17. Kovar, R., "La congolisation de l'Union minière du Haute-Katanga", in Annuaire français du Droit international, CNRS, Paris, 1967, p. 743.
18. Lukombe Nghenda, Zairianisation, radicalisation, rétrocession en République du Zaire, Presses universitaires du Zaire, Kinshasa, 1979.
19. Manzila Lutumbu, "Droit minier zairois", in Industrie minière, Vol. I, p. 13.

20. Maxwell Stamp Associates Limited, Pre-investment Study of the Copper Fabricating Industry in the East and Central African subregions, Study for ECA, (no date).
21. Mechim, Raffinerie du cuivre au Zaïre - Usine de Maluku, Brussels, March 1975.
22. Mikesell, F.R., The World Copper Industry, The Johns Hopkins University Press, Baltimore and London, 1979.
23. Mukendi Wa Nsanga, "Possibilités de transformation des produits cuivreux au Shata - Cas Latreca", in Industrie minière, Vol. II, p. 179.
24. Mulumba Kukoji, "Structure de consortiums internationaux miniers au Zaïre", in Industrie minière, Vol. I, p. 59.
25. Nyembo Shabani, L'industrie du cuivre dans le monde et le progrès économique de copperbelt africain, La renaissance du Livre, Brussels, 1975.
26. Simon, Y., Bourses de commerce et marchés à terme de marchandise, Dalloz, Paris, 1977.
27. Verwilghen, M., "Les principaux aspects juridiques de la nationalisation de l'UMHK", Revue belge de Droit international, Vol. VI, 1970.
28. Yabili Yalala, Code de la zairianisation, Editor "Mwanga-Hebdo", Lubumbashi, 1975.

IV. Miscellaneous documents

1. Gécamines, Rapport annuel 1980.
2. Le Portefeuille, Kinshasa, No. 15, March 1982.
3. Minerals Yearbook, Vol. I, 1978-79.
4. Société belgo-Africaine du Kivu, Rapport du Conseil d'administration, 1960.
5. SOZACOM, Rapport annuel 1980.
6. World Metal Statistics, April 1981.

GLOSSARY

1. AFRIMET: African Metals Corporations.
2. AUXILACS: Société Auxiliaire Industrielle et Financière des Grands Lacs Africains.
3. BCK: Compagnie du Chemin de fer du Bas-Congo au Katanga.
4. BMUS: Bureau of Wines, United States.
5. BRGM: Bureau de Recherches Géologiques et Minières.
6. COCI: Compagnie Congolaise pur le Commerce et l'Industrie.
7. CFL: Compagnie des Chemins de fer du Congo Supérieur aux Grands Lacs Africains.
8. CIPEC: Intergovernmental Council of Copper Exporting Countries.
9. CK: Compagnie du Katanga.
10. CMZ: Compagnie Maritime Zairoise.
11. CINKI: Comité National du Kivu.
12. COMEX: New York Commodity Exchange.
13. CSK: Comité Spécial du Katanga.
14. CTNC: Centre on Transnational Corporations.
15. FINAF: Compagnie Financière Africaine.
16. FORMINIERE: Société Internationale Forestière et Minière du Congo.
17. GECAMINES: Générale des Carrières et des Mines.
18. LATRECA: Laminoira Tréfileries et Cableriez.
19. LME: London Metal Exchange.
20. MGL: Compagnie Minière des Grands Lacs.
21. REMINA: Société belge de Recherches Minières en Afrique.
22. SERMIKA: Société d'Exploitation et de Recherche Minière au Katanga.
23. SGB: Société Générale de Belgique.
24. SCM: Société Générale des Minerais.
25. SMK: Société Minière de Kisenga.
26. SOBAKI: Société Belgo-Africaine du Kivu.
27. SODIMIZA: Société de Développement Industriel et Minier du Zaïre.
28. SOGEMET: Société Générale des Métaux.
29. SOZACOM: Société Zairoise de Commercialisation des Minerais.
30. SYMAF: Syndicat Minier Africain.
31. UMHK: Union Minière du Haut Katanga.